



**basic education**

Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

**Grade 3 Mathematics**  
**Mental Starters Assessment Project (MSAP)**

**Mental Starters: Tasks and Assessments**

**TEACHER GUIDE: XITSONGA**



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## MANGHENEO

Buku leyi ya Mudyondzisi yi na **6** wa **tiyuniti to Sungula Dyondzo ya Menthele eka Matematiki** ya vadyondzi va Giredi ya 3. Eka yuniti yin'wana na yin'wana ku kongomisiwa eka **makhakhuletelo** lama hambaneke. Maqhingha lama ya minkhakhuleto ya huma eka kharikhulamu. Yuniti yin'wana na yin'wana yi angarhela ntlawa wo karhi wa vuswikoti lebyi hlanganisiweke.

**Xikongomelo** i ku endlela leswaku vadyondzi va susiwa eka ku tirhisa tintiho ta vona kumbe tithali ephepheni ku hlayela hi van'we.

Ku hlayela hi van'we swi teka nkarhi wo leha naswona swi vanga leswaku ku va na swihoxo. Swi tlhela swi endla leswaku matirhelo ya va lamo ka ya nga hetisekangi loko vunavi bya tinomboro ti engeteleka. Makhakhuletelo na vuswikoti swi seketela nhluvukiso wa tinomboro.

### Tsevu wa maqhingha yo khakhuleta na nkarhi lowu ma nga ta wu teka

Tiyuniti ti angarheriwa eka tikotara tinharu to sungula hi ndlela leyi landzelaka:

|             |                                      |                    |   |      |   |  |  |      |
|-------------|--------------------------------------|--------------------|---|------|---|--|--|------|
| Kotara ya 1 | Ku Tlula ku ya eka khume             | $36 + 7 =$         |   | = 43 |   |  |  |      |
| Kotara ya 1 | Maqhingha ya ku Tlula                | $43 - 12 =$        |   | = 31 |   |  |  |      |
| Kotara ya 2 | Ku Mbirihata na ku Hafula            | $29 =$             | <br>double 29   | = 58 |   |  |  |      |
| Kotara ya 2 | Ku Katsakanya na ku Lulamisa         | $47 + 29 =$        |   | = 76 |   |  |  |      |
| Kotara ya 3 | Ku Veketela hi Vuntshwa              | $26 + 17 + 4 =$    | <br>$26 + 17 + 4$<br>30   | = 47 |   |  |  |      |
| Kotara ya 3 | Ku yelanisa ku hlanganisa na ku susa | $\square - 30 = 9$ | <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>30</td> <td>9</td> </tr> <tr> <td> </td> <td> </td> </tr> </table><br>$30 + 9 = \square$ | 30   | 9 |  |  | = 39 |
| 30          | 9                                    |                    |   |      |   |  |  |      |
|             |                                      |                    |   |      |   |  |  |      |

## Xikombiso

Yuniti yin'wana na yin'wana yi lehe ku fikela mavhiki manharhu naswona yi landzelela xikombiso lexi:



Yuniti yin'wana na yin'wana yi sungula yi tlhela yi hela hi xikambelwana xo koma xa vana. Mamakelo ya swikambelwana leswi ya nyika vuxokoxoko eka wena na vadyondzi ku kamba leswaku madyondzelo ya vona ya antswa ku fika kwihi endzhaku ka ku tirhisiwa ka ntlawa wo karhi wa vuswikoti lebyi va byi tirhiseke eka mavhiki manharhu.

Eka yuniti yin'wana na yin'wana, hi kongomisa eka tinxaka tinharhu ta minkhakhuleto:

- Fluency**
  - Answer calculations instantly
- Strategic Calculating**
  - Use efficient strategies to answer problems
- Strategic Thinking**
  - Use relationships to answer problems

Ku tirhisa Swisungula Dyondzo eka yuniti yin'wana na yin'wana na ttilasi ya wena swi fanele swi antswisa matirhelo ya vadyondzi ku suka eka mgingiriko leyi rhangelaka na leyi landzelaka xikambelwana. Ku antswa loku ku komba ku ya emahlweni eka vuswikoti bya menthele na nhluvukiso wa tinomboro.

## Matirhiselo ya buku leyi

Xibukwana lexi xi kombisa Swikambelwana na Swisungula Dyondzo eka yuniti yin'wana na yin'wana. Swisungula Dyondzo swi endleriwile ku ringana eka xiyenge xa swa nomo na menthele xa **10 wa timinete** eku sunguleni ka dyondzo ya matematiki.

Xisungula Dyondzo xin'wana na xin'wana xi sungula hi **xitoloveto xa minete yi1 xa menthele** lexi nga kongomisiwa eka vuswikoti bya nkoka bya ku tsundzuka hi ku hatlisa eka yuniti yokarhi. Vadyondzi va fanele va hlamlula swivutiso leswi hi ku hatlisa na vutitshembhi.

**Nongonoko wa nghingiriko wa Xisungula Dyondzo** wu landzela xitoloveto. Nongonoko wa nghingiriko eka xisungula dyondzo xin'wana na xin'wana wu hlamusela:

- **madyondziseloy qhingha** (leswi kombisiweke eximatsini) na

- **Ieswi swi faneleke ku tsariwa** exitsalelwani (ieswi kombisiweke exineneni)

Endzhaku ka xisungula dyondzo xin'wana na xin'wana ku na **micingiriko ya mudyondzi ha un'weun'we** leyi vadyondzi faneleke ku yi endla. Vadyondzi va fanele hakanyingi va ringeta mintirho leyi hi ku tirha emiehlekeweni hi ku tirhisa qhingga leri va vaku va ha ku dyondzisiwa. Byela vadyondzi leswaku **Va nga hlayeli hi va1**. Loko vadyondzi va tikeriwa, va vutisi ku kombisa matirhelo ya vona, xik.eka ndzhati wa mintsengo lowu nga tsariwangiki nchumu, kumbe eka dayagiramu ya bara. Swidirowiwa swa ndzhati wa mintsengo na dayagiramu ya bara swi fanele swo va 'mpfapfarhuto' tanihileswi xikongomelo ku nga ku seketela hi ku hatlisa mtirhelo ya le miehlekeweni.

Kombela vadyondzi ku **hlamusela maehleketelelo ya vona** eka wena na le ka van'wana. Leswi swi ta ku pfuna ku hlela loko va ri eku tirhiseni qhingga leri va dyondzisiweke.

**Tivhidiyo to Seketela:** Etlhelo ka nkunguhato wa xisungula dyondzo xin'wana na xin'wana ku na linki leyi ku yisaka eka vhidiyo yo koma leyi kombaka leswi qhingga ri tirhisaka swona. U nga pfula linki hi ku:

- Kombetela xiteka-swifaniso (khamera) xa foni ya wena eka QR khodi ya xikwere kumbe
- Tsala linki ya yuchubu eka burawuzara ya webe

Endzhaku ka Xisungula Dyondzo xa 4 na Xisungula Dyondzo xa 7, ku na **micingiriko ya switoloveto ya mudyondzi ha un'weun'we** leyi vadyondzi va nga yi tirhisaka ku titoloveta loko va ri ekaya.

**Swikomba-tinhlamulo** swa micingiriko leyi rhangelaka na leyi landzelaka swikambelwana na ya mintirho swi nyikiwile emakumu ka buku leyi.

### Buku ya Print Masters

Ku na xibukwana xa le tlhelo xa **PRINT MASTERS** lexi nga na:

- Micingiriko hinkwayo leyi rhangelaka na leyi landzelaka swikambelwana
- Micingiriko hinkwayo leyi faneleke ku ya tirhiwa ekaya
- Switirhisiwa hinkwaswo leswi kandziyisekaka leswi seketelaka dyondzo

## KU TLULA KU YA EKA KHUME

### Manghenelo

Nkongomiso eka swisungula dyondzo swa mune leswi swo sungula wu le ka ku hlanganisa hi ku tlula ku ya eka khume. Eka swisungula dyondzo swa mune leswi landzelaka, nkongomiso wu le ka ku susa hi ku tlula ku ya eka khume. Yin'wana ya mintirho yi fanele ku rhangeriwa hi mudyondzisi exitsalelwani kasi yin'wana i ya leswaku vadyondzi va tiendlela va ri vox.

### Vuswikoti byo Tsundzuka hi ku Hatlisa

Ku na tsevu wa vuswikoti byo tsundzuka hi ku hatlisa lebyi vadyondzi va faneleke ku dyondza ku tlula ku ya eka khume:

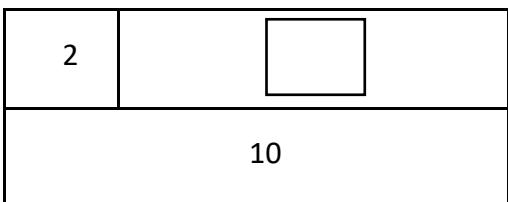
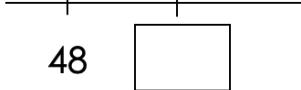
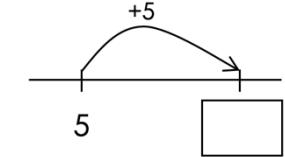
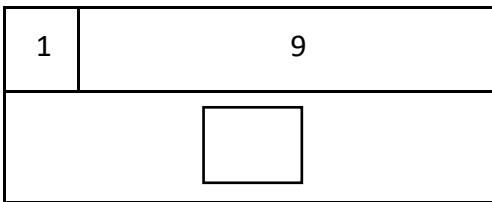
- tibondo ta 10 na andziso wa 10 (xik. 7 +  $\square$  = 10; 12 +  $\square$  = 20)
- ku hlanganisa ku ya eka andziso wa khume (xik. 60 + 3 = 63)
- ku susa ku sukela eka andziso wa khume (xik. 60 – 2 = 58)
- ku tlula ku ya eka nomboro ya andziso wa khume leyi **landzelaka** ku suka eka nomboro yo karhi (xik. 32 → 40)
- ku tlula ku ya eka nomboro ya andziso wa khume lowu teke eku sungulen (xik. 56 → 50)
- ku cinca nonganoko wa nkhakhuleto (xik. 7 + na nomboro yihi ku hi nyika khume? Hi yihi nomboro leyi hlanganisiwaka na 7 ku humesa khume?)

Vito:

Ku Tlula Ku Ya Eka Khume

**Ku Tlula ku ya eka Khume: Xikambelwana ku nga si sungula Dyondzo****XIYENGE XA 1**

Timinete ti2 eka papila leri

|     |   |     |  |
|-----|---|-----|--|
| 1.  | $7 + 3 =$ <input type="text"/>  | 11. | $50 + 6 =$ <input type="text"/>  |
| 2.  | $2 + 8 =$ <input type="text"/>  | 12. | $3 + 60 =$ <input type="text"/>  |
| 3.  | $10 = 7 +$ <input type="text"/>   | 13. | $40 - 7 =$ <input type="text"/>  |
| 4.  | 8 i yintsongo eka 10 hi <input type="text"/>  | 14. | $40 + 8 =$ <input type="text"/>  |
| 5.  |    | 15. | Hi yihi nomboro ya andziso wa 10 leyi landzelaka?       |
| 6.  |   | 16. | $100 + 27 =$ <input type="text"/>  |
| 7.  | $10 - 5 =$ <input type="text"/>   | 17. | Hi yihi nomboro ya andziso wa 10 leyi rhangelaka 34?  |
| 8.  | $10 - 4 =$ <input type="text"/>   | 18. | <input type="text"/> + 7 = 50  |
| 9.  |  | 19. | $30 -$ <input type="text"/> $= 27$   |
| 10. | <input type="text"/> + 10 = 10  | 20. | $87 = 80 +$ <input type="text"/>   |

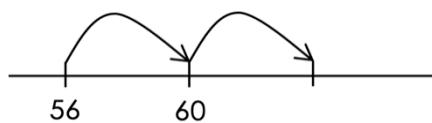
**Ntsengo 20**

**Ku Tlula ku ya eka Khume: Xikambelwana ku nga si sungula Dyondzo**

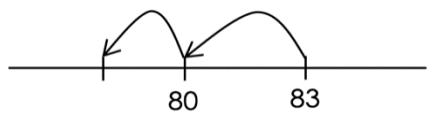
XIYENGE XA 2

Timinete ti3 eka papila leri

1.  $56 + 8 = \boxed{\phantom{00}}$



2.  $83 - 4 = \boxed{\phantom{00}}$



3.  $93 - 7 = \boxed{\phantom{00}}$

4.  $67 + \boxed{\phantom{00}} = 73$

5.  $\boxed{\phantom{00}} + 7 = 82$

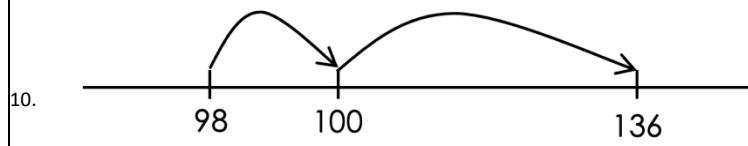
6.  $67 + 5 = 67 + 3 + \boxed{\phantom{00}}$

7.  $94 - \boxed{\phantom{00}} = 94 - 4 - 2$

8.  $98 + 56 = 98 + 2 + \boxed{\phantom{00}}$



$103 - \boxed{\phantom{00}} = 95$



$98 + \boxed{\phantom{00}} = 136$

**Ntsengo 10**

## KU TLULA KU YA EKA KHUME: XISUNGULA DYONDZO XA 1

### Xitoloveto xa minete yi1

#### Pop-Fizz

Mudyondzisi u vulaaku 'pop' kutani vadyondzi va ku 'fizz'; kutani mudyondzisi a vula nomboro, vadyondzi va hlamula hi ku vula nomboro leyi pananisekaku hi ku tirhisa vuswikoti byo tsundzuka hi ku hatlisa.

#### a. Pop-Fizz Endla 10

Eka lowu muxaka, vadyondzi va fanele va hlamula hi ku tirhisa nomboro leyi nga ta endla ntsengo wa 10.

|                  |   |                                   |
|------------------|---|-----------------------------------|
| Mudyondzisi: pop | → | Mudyondzi: fizz                   |
| Mudyondzisi: 3   | → | Mudyondzi: 7                      |
| Mudyondzisi: pop | → | Mudyondzi: fizz                   |
| Mudyondzisi: 6   | → | Mudyondzi: 4 hi ndlela yaleyo ... |

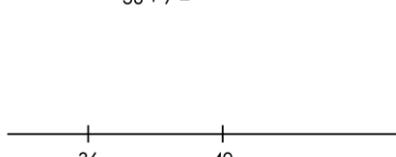
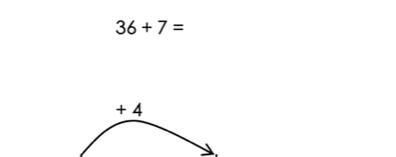
#### b. Pop-Fizz Endla 20 (kumbe yin'wana nomboro ya andziso wa 10)

Eka muxaka lowu, vadyondzi va fanele va hlamula hi ku tirhisa nomboro leyi nga ta endla ntsengo wa 20 (kumbe yin'wana na yin'wana nomboro ya andziso wa 10).

|                  |   |                                  |
|------------------|---|----------------------------------|
| Mudyondzisi: pop | → | Mudyondzi: fizz                  |
| Mudyondzisi: 16  | → | Mudyondzi: 4                     |
| Mudyondzisi: pop | → | Mudyondzi: fizz                  |
| Mudyondzisi: 11  | → | Mudyondzi: 9 hi ndlela yaleyo... |

### Nongonoko wa Nghingiriko

Eka dyondzo leyi, hi tirhisa qhingga ra ku tlula ku ya eka khume eka minkakhuleto yo hlanganisa.

|   |  |
|---|--|
| <p>Nhlayo: <math>36 + 7</math></p> <p>Tsala '36 + 7 =' exitsalelweni.</p> <p>Dirowa ntila kutani u kombisa laha u nga ta tsala '36'.</p> <p>Mudyondzisi: Hi le ku hlanganiseni kutani hi fanele ku tlula hi ya emahlweni. Hi yihi nomboro ya andziso wa 10 leyi landzelaka 36?</p> <p>Mudyondzi u fanele ku ta a ta kombisa '40' eka ntila.</p> | $36 + 7 =$<br><br><br>$36 + 7 =$<br> |
| <p>Mudyondisi: Hi fanele hi tlula 7 ku ya emahlweni ku suka eka 36. A hi tluleni kan'we ku ya eka nomboro leyi landzelaka ya andziso wa khume ehandle ka ku tlula hi va1. 36 yi hlanganisiwa na yini ku hi nyika 40?</p> <p>Vadyondzi: 4</p>  |  |

|  |  |
|--|--|
| <p>Mudyondzisi: Hi hlanganisile 4. Hi fanele hi hlanganisa 7.<br/>7 yi tlhantlhwa yi humesa 4 na yihi?</p> <p>Vadyondzi: 3</p> <p>Tlhantlha 7 eka 36 + 7 yi humesa 4 na 3.</p> <p>Mudyondzisi: Xana ha ha fanele ku tlhela hi hlanganisa yihi?</p> <p>Vadyondzi: 3</p> |  |
| <p>Mudondzisi: Hi yihi nhlamulo ya 40 hi hlangnisa na 3?</p> <p>Vadyondzi: 43</p> <p>Mudyondzisi: So, <math>36 + 7 = 36 + 4 + 3 = 43</math></p>  |  |

### Mgingiriko yo tirhiwa hi vadyondzi ha un'weun'we

Vadyondzi va fanele va ringeta swikombiso leswi landzelaka *hi ku tirhela emiehlekeweni*:

$$48 + 6 \qquad 63 + 8$$

Vadondzi va fanele va hlamusela maehleketelelo ya vona, xik. "eka 48 + 6, Ndzi hlanganisa 2 eka 48 ku kuma 50, kutani ndzi hlanganisa 4, nhlamulo i 54."

Byela vadyondzi leswaku VA NGA hlayeli hi va1.

Vadyondzi lava va tikeriwaka ku kuma tinhlamulo hi ku tirha emiehlekeweni va nga dirowa ndzhati wa mintsengo lowu mpfaparhutiweke ku va pfuna.

### Vhidiyo yo seketela

Ku Tlula Ku Ya eka Khume 1



[https://youtu.be/iJNrdV3P4\\_s](https://youtu.be/iJNrdV3P4_s)

**Vhidiyo**

Ku Tlula Ku Ya eka Khume 2



<https://youtu.be/upvlvkC3Yko>

## KU TLULA KU YA EKA KHUME: XISUNGULA DYONDZO XA 2

### Xitoloveto xa Menthele xa Minete yi1

a. Pop-Fizz: Endla 10 naswona/kumbe Endla 20 (kumbe nomboro yin'wana na yin'wan ya andziso wa khume)

b. Ku tlulela eka nomboro leyi **landzelaka** ya andziso wa 10 xik. 23 → 30; 56 → 60)

Leswi a hi nkatsakanyo ku ya eka vukhume bya le kusuhi kambe i ku tlulela eka nomboro leyi **landzelaka** ya andziso wa khume eka ndzhati wa mintsengo.

“Hi yihi nomboro ya andziso wa khume leyi **landzelaka endzhaku ka...**?”

Mudyondzisi: 47 → Vadyondzi: 50

Mudyondzisi: 32 → Vadyondzi: 40 hi ndlela yaleyo ...

### Nongonoko wa Nghingiriko

Eka dyondzo leyi, hi tirhisa qhingga ra ku tlula ku ya eka khume eka minkakhuleto yo hlanganisa.

|   |   |
|---|---|
| <p>Kombela vadyondzi ku tsundzuka ku suka tolo: Hi hlanganise hi ndlela yihi <math>36 + 7</math>?</p> <p>Sungula hi ku dirowa ntila kutani u kombisa ‘36’.</p> <p>Mudyondzisi: Ha hlanganisa kutani hi fanele hi tlula hi ya emahlweni. Hi yihi nomboro leyi landzelaka ya andziso wa khume endzhaku ka 36?</p> <p>Vadyondzi: 40</p> <p>Mudyondzi u fanele ku ta a ta kombisa eka ntila.</p> <p>Pfumelela vadyondzi ku hlamusela maendlelo na leswi swi tirhisiwaka xiswona, na ku tlhela va kombisa exitsalelwani.</p> | <p>Xifaniso, lexi heleleke xi kombisiwile laha hansi</p> $36 + 7 = 43$  |
| <p>Kutani, kombisa exitsalelwani leswaku ku tlurisiwa ku yini ku ya eka khume ku hlamula: <math>27 + 8</math></p> <p>Sungula hi ku dirowa ntila kutani u kombisa ‘27’ kutani u hlamula xiphijo hi ku tirhisa qingga ra ku tlula ku ya eka khume.</p>  | <p>Xifaniso, lexi heleleke xi kombisiwile laha hansi:</p> $27 + 8 = 35$ |

### Nghingiriko wo tirhiwa hi vadyondzi ha un'weun'we

Sweswi vadyondzi va fanele va ringeta xikombiso lexi landzelaka *hi ku tirhela emiehlekeweni: 42 + 9*

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. “eka 42 + 9, Ndzi hlanganisa 8 eka 42 ku kuma 50, kutani ndzi hlanganisa 1 ku fika eka 51”.

Byela vadyondzi leswaku VA NGA hlayeli hi va1.

Vadyondzi lava va tikeriwaka ku kuma tinhlamulo hi ku tirha emiehlekeweni va nga dirowa ndzhati wa mintsengo lowu mpfaparhutiweke ku va pfuna.

**Vhidiyo yo Seketela**

Ku Tlula Ku Ya eka Khume 3



[https://youtu.be/wDEEqU9B\\_5Q](https://youtu.be/wDEEqU9B_5Q)

## KU TLULA KU YA EKA KHUME: XISUNGULA DYONDZO XA 3

### Xitoloveto xa Menthele xa Minete yi1

a. Ku tlula ku ya eka nomboro leyi **landzelaka** ya andziso wa khume (xik. 23 → 30; 56 → 60)

b. Ku hlanganisa eka nomboro ya andziso wa khume

“Xana hi yihi nomboro...?”

Mudyondzisi:  $30 + 6 \rightarrow$  Vadyondzi: 36

Mudyondzisi:  $50 + 2 \rightarrow$  Vadyondzi: 52

Mudyondzisi:  $70 + 5 \rightarrow$  Vadyondzi: 75      hi ndlela yaleyo ...

### Nongonoko wa Nghingiriko

Eka dyondzo leyi, hi tirhisa qhingga ra ku tlula ku ya eka khume eka minkakhuleto yo hlanganisa.

|  |  |
|--|--|
| <p>Kombisa exitsalelwani leswaku ku tlurisiwa ku yini ku ya eka khume ku hlamula: <math>35 + 8</math></p> <p>Sungula hi ku dirowa ntila u tlhela u kombisa ‘35’.</p> <p>Hlamula xiphiko hi ku tirhisa qhingga ra ku tlula ku ya eka khume.</p> | <p>Xifaniso, lexi heleleke xi kombisiwile laha hansi::</p> <p><math>35 + 8 = 43</math></p> |
|--|--|

### Micingiriko yo tirhiwa hi vadyondzi ha un’weun’we

Vadyondzi va fanele va ringeta swikombiso leswi landzelaka *hi ku tirhela emiehlekeweni*:

$$44 + 8 \qquad 39 + 7$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. “eka 44 + 8, Ndzi hlanganisa 6 eka 44 ku kuma 50, kutani ndzi hlanganisa 2 ku ya eka 52”.

Byela vadyondzi leswaku VA NGA hlayeli hi va1.

Nyika nkarhi wo endla swin’wana switoloveto eka lava va nga ta hatlisa va heta:

$$43 + 8 \qquad 67 + 6 \qquad 84 + 7$$

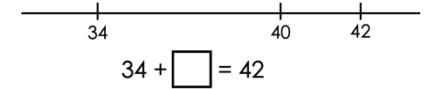
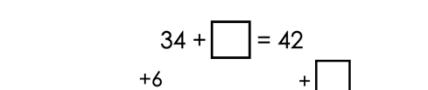
**KU TLULA KU YA EKA KHUME: XISUNGULA DYONDZO XA 4****Xitoloveto xa Menthele xa Minete yi1**

Tibondo ta tinomboro ku fika eka 10: Swivulwa swa tinomboro ku suka eka dayagiramu ya bara

|  |   |   |   |    |  |
|--|---|---|---|----|--|
| Mudyondzisi: Leyi i dayagiramu ya bara naswona yi komba leswaku 7 na 3 ti endla 10.  | Tsala      leswi      landzelaka<br>exitsalelwani :<br><br><table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>7</td><td>3</td></tr><tr><td colspan="2">10</td></tr></table> | 7 | 3 | 10 |  |
| 7  | 3   |   |   |    |  |
| 10   |   |   |   |    |  |
| Mudyondzisi: 7 yi hlanganisiwa na yini ku endla 10?  | Lulamisa      swikombiso      leswi<br>exitsalelwani:   |   |   |    |  |
| Vadyondzi: 3   | <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>2</td><td>8</td></tr><tr><td colspan="2">10</td></tr></table>  | 2 | 8 | 10 |  |
| 2  | 8   |   |   |    |  |
| 10   |   |   |   |    |  |
| Mudyondzisi: Kutani, 3 yi hlanganisiwa na yini ku endla 10?  | <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>6</td><td>4</td></tr><tr><td colspan="2">10</td></tr></table>  | 6 | 4 | 10 |  |
| 6  | 4   |   |   |    |  |
| 10   |   |   |   |    |  |
| Vadyondzi: 7   | $2 + \square = 10$  |   |   |    |  |
| Mudyondzisi u kombetela eka nkhakhuleto wun'wana na wun'wana exitsalelwani kutani ttilasi yi nyika nomboro leyi kayivelaka.  | $8 + \square = 10$  |   |   |    |  |
| Yana emahlweni u vutisa ttilasi, hi marito, tirhisa swikombiso swotala u tirhisa tibondo ta khume:<br><br>1 + nomboro yihi i 10? kutani 9 + nomboro yihi i 10?<br>2 + nomboro yihi i 10? kutani 8 + nomboro yihi i 10?<br>6 + nomboro yihi i 10? kutani 4 + nomboro yihi i 10? | $\square + 4 = 10$<br>$4 + \square = 10$  |   |   |    |  |

**Nongonoko wa Nghingiriko**

Eka dyondzo leyi, hi tirhisa qhingga ra ku tlula ku ya eka khume ku kuma nomboro leyi kayivelaka eka minkakhuleto yo hlanganisa.

|   |   |
|---|---|
| Tirhisa ku tlula ku ya eka khume ku hlamula<br><br>$34 + \square = 42$ .                | $34 + \square = 42$<br><br><br><br>$34 + \square = 42$<br><br><br><br>$34 + \square = 42$<br><br> |
| Dirowa ntila lowu kombisaka '34' na '42'.   |   |
| Mudyondzisi: Hi yihi nomboro ya andziso wa khume leyi landzelaka 34?                    |   |
| Vadyondzi: 40   |   |
| Kombisa '40' eka ndzhati wa mintsengo.  |   |
| Mudyondzisi: 34 yi hlanganisiwa na nomboro yihi ku humesa 40?                           |   |
| Vadyondzi: 6  |   |
| Tsala '6' eka buloko leyi nga ehenhla ka ntlulo hi ku ya hilaha swi kombisiweke hakona. |   |

Loko vadyondzi va tikeriwa hi xikombiso lexi, va vutise, “4 + nomboro yihi i10?”

Vadyondzi va fanele va swi kota ku hlamula leswaku i ‘6’, kutani u va kombisa leswaku swa fana eka tinomboro hinkwato ta andziso wa khume:

kutani:  $4 + 6 = 10$ ;  $14 + 6 = 20$ ;  $24 + 6 = 30$ ;  $34 + 6 = 40$ ...

Mudyondzisi: Xana hi yihi nomboro leyi hlanganisiwaka na 40 ku kuma 42?

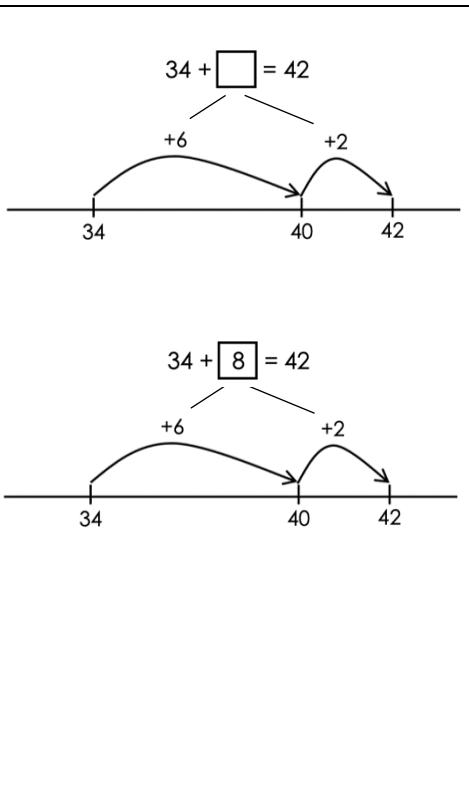
Vadyondzi: 2

Mudyondzisi: Hi yihi nomboro loko ku hlanganisiwa 6 na 2? (kombetela eka 6 na 2 eka dayagiramu)

Vadyondzi: 8

Mudyondzisi: Kutani, hi yihi nomboro leyi hlanganisiwaka eka 34 ku kuma 42?

Vadyondzi: 8



### **Mgingiriko yo tirhiwa hi vadyondzi ha un’weun’we**

Vadyondzi va fanele va ringeta swikombiso leswi landzelaka *hi ku tirhela emiehlekeweni*:

$$28 + \square = 35 \quad 67 + \square = 72$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. “eka xikombiso xo sungula, nomboro leyi landzelaka ya andziso wa khume i 30, kutani ndzi hlanganisa 2 ku kuma 30 kutani ndzi fanele ndzi hlanganisa 5 ku fika eka 35. 2 yi hlanganisiwa na 5 i 7.”

Byela vadyondzi leswaku VA NGA hlayeli hi va1.

### **Nghingiriko wo famba na wona ekaya: Phepha ro tirhela ra 1**

Endzhaku ka dyondzo nyika vadyondzi Phepha ro tirhela ra 1.

A wu fanelanga ku pimela vadyondzi nkarhi loko va ri karhi va tirha eka papila leri. Xikongomela i ku nyika vadyondzi nkarhi lesawku va titoloveta hi mgingiriko yo tsala ya leswi va swi endleke emiehlekeweni.

Ku Tlula Ku Ya eka Khume 4



<https://youtu.be/INITWPDMFKY>

Vito:

**Ku Tlula ku ya eka Khume: Phepha Ro Tirhela Ra 1**

|  |  |                      |                      |                      |    |  |   |    |   |   |  |                      |                      |    |  |  |  |
|--|--|----------------------|----------------------|----------------------|----|--|---|----|---|---|--|----------------------|----------------------|----|--|--|--|
| 1. $6 + 4 =$ <input type="text"/>  | 13. $50 + 6 =$ <input type="text"/>              |                      |                      |                      |    |  |   |    |   |   |  |                      |                      |    |  |  |  |
| 2. $1 + 9 =$ <input type="text"/>  | 14. $50 + 4 =$ <input type="text"/>              |                      |                      |                      |    |  |   |    |   |   |  |                      |                      |    |  |  |  |
| 3. 7 i yintsongo eka 10 hi <input type="text"/>  | 15. 8 i yintsongo eka 30 hi <input type="text"/> |                      |                      |                      |    |  |   |    |   |   |  |                      |                      |    |  |  |  |
| 4. $10 = 3 +$ <input type="text"/>   | 16. $20 = 19 +$ <input type="text"/>             |                      |                      |                      |    |  |   |    |   |   |  |                      |                      |    |  |  |  |
| 5. <table border="1" style="width: 100%;"><tr><td>1</td><td></td><td><input type="text"/></td><td></td></tr><tr><td colspan="4" style="text-align: center;">10</td></tr></table> | 1  |                      | <input type="text"/> |                      | 10 |  |   |    | 17. <table border="1" style="width: 100%;"><tr><td>4</td><td></td><td><input type="text"/></td><td></td></tr><tr><td colspan="4" style="text-align: center;">30</td></tr></table> | 4 |  | <input type="text"/> |                      | 30 |  |  |  |
| 1  |  | <input type="text"/> |                      |                      |    |  |   |    |   |   |  |                      |                      |    |  |  |  |
| 10   |  |                      |                      |                      |    |  |   |    |   |   |  |                      |                      |    |  |  |  |
| 4  |  | <input type="text"/> |                      |                      |    |  |   |    |   |   |  |                      |                      |    |  |  |  |
| 30   |  |                      |                      |                      |    |  |   |    |   |   |  |                      |                      |    |  |  |  |
| 6.<br>5  10 <input type="text"/>   | 18.<br>40  44 <input type="text"/>               |                      |                      |                      |    |  |   |    |   |   |  |                      |                      |    |  |  |  |
| 7. $10 - 5 =$ <input type="text"/>   | 19. $60 - 4 =$ <input type="text"/>              |                      |                      |                      |    |  |   |    |   |   |  |                      |                      |    |  |  |  |
| 8. $10 - 8 =$ <input type="text"/>   | 20. $60 - 7 =$ <input type="text"/>              |                      |                      |                      |    |  |   |    |   |   |  |                      |                      |    |  |  |  |
| 9. <table border="1" style="width: 100%;"><tr><td>3</td><td>7</td><td></td></tr><tr><td colspan="3" style="text-align: center;"><input type="text"/></td></tr></table>           | 3  | 7                    |                      | <input type="text"/> |    |  | 21. <table border="1" style="width: 100%;"><tr><td>39</td><td>1</td><td></td></tr><tr><td colspan="2"></td><td><input type="text"/></td></tr></table> | 39 | 1   |   |  |                      | <input type="text"/> |    |  |  |  |
| 3  | 7  |                      |                      |                      |    |  |   |    |   |   |  |                      |                      |    |  |  |  |
| <input type="text"/>   |  |                      |                      |                      |    |  |   |    |   |   |  |                      |                      |    |  |  |  |
| 39   | 1  |                      |                      |                      |    |  |   |    |   |   |  |                      |                      |    |  |  |  |
|  |  | <input type="text"/> |                      |                      |    |  |   |    |   |   |  |                      |                      |    |  |  |  |
| 10. <input type="text"/> + 4 = 10  | 22. <input type="text"/> + 3 = 23                |                      |                      |                      |    |  |   |    |   |   |  |                      |                      |    |  |  |  |
| 11. 8 + <input type="text"/> = 10  | 23. 30 + <input type="text"/> = 36               |                      |                      |                      |    |  |   |    |   |   |  |                      |                      |    |  |  |  |
| 12.<br>5  10 <input type="text"/>  | 24.<br>40  47 <input type="text"/>               |                      |                      |                      |    |  |   |    |   |   |  |                      |                      |    |  |  |  |

### **Tinotsi ta mudyondzisi**

Laha u nga endla tinotsi hi dyondzo na ku kombisa leswaku i vadyondzi vahi lava va ha lavaka ku pfuniwa hi qhingha ra ku tlula ku ya eka khume.

Nakambe u nga endla tinotsi ta timhaka tin'wana na tin'wana leti u lavaka ku ti langutisa eka xisungula dyondzo lexi landzelaka

**KU TLULA KU YA EKA KHUME: XISUNGULA DYONDZO XA 5****Xitoloveto xa Menthele xa Minete yi1**

a. Ku tlulela eka nomboro ya andziso wa khume leyi va ka kona **ku nga si va na**

Leswi a hi nkatsakanyo ku ya eka vukhume bya le kusuhi, kambe i ku tlula ku ya eka nomboro ya andziso wa khume leyi vaka kona **ku nga si va na** eka ndzhati wa mintsengo.

“Ndzi nyike nomboro ya andziso wa khume leyi vaka kona **ku nga si va na...**”

Mudyondzisi: 26 → Vadyondzi: 20

Mudyondzisi: 53 → Vadyondzi: 50 hi ndlela yaleyo...

b. Ku susa ku suka eka nomboro ya andziso wa khume

“Xana hi yihi nhlamulo...?”

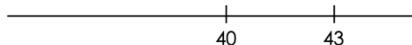
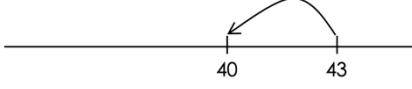
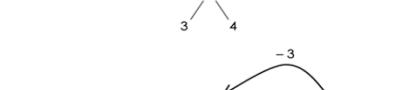
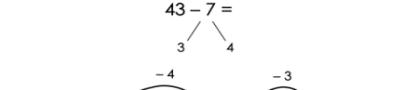
Mudyondzisi: 30 – 6 → Vadyondzi: 24

Mudyondzisi: 50 – 2 → Vadyondzi: 48

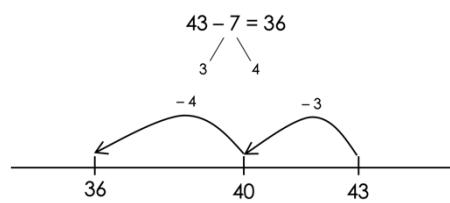
Mudyondzisi: 70 – 5 → Vadyondzi: 65 hi ndlela yaleyo...

**Nongonoko wa Nghingiriko**

Eka dyondzo leyi hi tirhisa qhingga ra ku tlula ku ya eka khume ku hlamula minkakhuleto ya ku susa.

|   |   |
|---|---|
| <p>Xiphiko: <math>43 - 7</math><br/>         Tsala ‘<math>43 - 7 =</math>’ exitsalelwani.<br/>         Dirowa ntila kutani u kombisa laha ku nga na ‘43’.<br/>         Mudyondzisi: Hi le ku suseni kutani hi fanele ku tlula hi tlhelela endzhaku. Xana hi yihi nomboro ya andziso wa khume leyi vaka kona ku nga si va na 43?<br/>         Vadyondzi: 40<br/>         Mudyondzi u fanele ku ta a ta kombisa eka ndzhati wa mintsengo.</p> | <p><math>43 - 7 = \boxed{\phantom{0}}</math></p>    |
| <p>Mudyondzisi: Hi fanele hi tlula ka 7 ku ya endzhaku.<br/>         A hi tluleni kan’we ku ya eka nomboro ya andziso wa khume ku nga ri ku hlayela hi ya endzhaku hi va1. Hi yihi nomboro leyi hi nga yi susaka eka 43 leswaku hi kuma 40?<br/>         Vadyondzi: 3</p>   | <p><math>43 - 7 =</math></p>    |
| <p>Mudyondzisi: Hi susile 3. Hi fanele susa nkombo. 7 yi tlhantliwa ku huma 3 na nomboro yihi?<br/>         Vadyondzi: 4<br/>         Tlhantliha 7 eka <math>43 - 7</math> yi humesa 3 na 4.<br/>         Mudyondzisi: Hi yihi nomboro leyi ha ha faneleke ku yi susa?<br/>         Vadyondzi: 4</p>  | <p><math>43 - 7 =</math></p>  <p><math>43 - 7 =</math></p>  |

Mudyondzisi: Hi yihi nhlamulo ya 40 hi susa 4?  
 Vadyondzi: 36  
 Mudyondzisi: kutani,  $43 - 7 = 43 - 3 - 4 = 36$ .  
 Tsala nhlamulo eka ndzhati wa mintsengo.



### **Migingiriko yo tirhiwa hi vadyondzi ha un'weun'we**

Vadyondzi va fanele va ringeta swikombiso leswi landzelaka *hi ku tirhela emiehlekeweni*:

$$54 - 6 \qquad 63 - 5$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik.“eka 54 – 6, ndzi susa 4 eka 54 ku kuma 50, kutani ndzi susa 2, kutani nhlamulo i 48.”

Byela vadyondzi leswaku VA NGA hlayeli hi va1.

Vadyondzi lava va tikeriwaka ku kuma tinhlamulo hi ku tirha emiehlekeweni va nga dirowa ndzhati wa mintsengo lowu mpfapfarutiweke ku va pfuna.

### **Vhidiyo yo Seketela**

Ku Tlula Ku Ya eka Khume 5



<https://youtu.be/-bQNTOPly7I>

**Vhidiyo yo Seketela**

Ku Tlula Ku Ya eka Khume 6



<https://youtu.be/JvNKtAdrzfM>

## KU TLULA KU YA EKA KHUME: XISUNGULA DYONDZO XA 6

### Xitoloveto xa Menthele xa Minete yi1

a. Ku tlulela eka nomboro ya andziso wa khume leyi vaka kona **ku nga si va na**

(e.g. 23 → 20; 56 → 50)

b. Ku susa ku suka eka nomboro ya andziso wa khume (xik. 30 – 3 → 27; 40 – 6 → 34)

### Nongonoko wa Nghingiriko

Eka dyondzo leyi hi tirhisa qhingga ra ku tlula ku ya eka khume ku hlamula minkhakhuleto ya ku susa.



|   |  |
|---|--|
| <p>Kombela vadyondzi ku ringeta ku tsundzuka ku suka tolo: Xana hi hlamurisile ku yini <math>43 - 7</math>?</p> <p>Sungula hi ku dirowa ntila kutani u kombisa laha ku nga na '43'.</p> <p>Pfumelela vadyondzi ku hlamusela maendlelo na leswi va tirhiseke xiswona, na ku tlhela va kombisa exitsalelwani.</p> | <p>Xifaniso, lexi heleleke xi kombisiwile laha hansi::</p> $43 - 7 = 36$ |
| <p>Kutani, kombisa exitsalelwani leswaku ku tlurisiwa ku yini ku ya eka khume ku hlamula: <math>27 - 8</math></p> <p>Sungula hi ku dirowa ntila kutani u kombisa laha ku nga na '27' kutani u ololoxa xiphigo hi ku tirhisa qhingga ra ku tlula ku ya eka khume.</p>  | <p>Xifaniso, lexi heleleke xi kombisiwile laha hansi::</p> $27 - 8 = 19$ |

### Nghingiriko wo tirhiwa hi vadyondzi ha un'weun'we

Vadyondzi va fanele va ringeta xikombiso lexi landzelaka *hi ku tirhela emiehlekeweni:*

35 – 7

Vadyondzi va fanele ku hlamusela maehleketelelo ya vona, xik. "eka 35 – 7, Ndzi endlile 35 – 5 ku kuma 30 kutani hi susa 2 ku kuma 28."

Byela vadyondzi leswaku VA NGA hlayeli hi va1.

Vadyondzi lava va tikeriwaka ku kuma tinhlamulo hi ku tirha emiehlekeweni va nga dirowa ndzhati wa mintsengo lowu mpfaparhutiweke ku va pfuna.

Nyika lava va nga ta hatlisa swinene ku heta swo tala swo titoloveta hi swona:

42 – 8

62 – 6

84 – 7

**Vhidiyo yo Seketela**

Ku Tlula Ku Ya eka Khume 7



[https://youtu.be/npm\\_pVwiXD4](https://youtu.be/npm_pVwiXD4)

## KU TLULA KU YA EKA KHUME: XISUNGULA DYONDZO XA 7

### **Xitoloveto xa Menthele xa Minete yi1**

- a. Ku tlulela eka nomboro ya andziso wa khume leyi va ka kona **ku nga si va na** (xik. 23 → 20; 56 → 50)
- b. Ku susa ku suka eka nomboro ya andziso wa khume (xik. 30 – 3 → 27; 40 – 6 → 34)

### **Nongonoko wa Nghingiriko**

Eka dyondzo leyi hi tirhisa qhingga ra ku tlula ku ya eka khume ku hlamula minkhakhuleto ya ku susa.



|  |   |
|--|---|
| <p>Kombisa exitsalelwani leswaku ku tlurisiwa ku yini ku ya eka khume ku hlamula: 35 – 8</p> <p>Sungula hi ku dirowa ntila kutani u kombisa laha ku nga na '35'.</p> <p>Oloxa xiphiqo hi ku tirhisa qhingga ra ku tlula ku ya eka khume.</p> | <p>Xifaniso, lexi heleleke xi kombisiwile laha hansi::</p> $\begin{array}{c} 35 - 8 = 27 \\ \swarrow \quad \searrow \\ 5 \quad 3 \end{array}$ |
|--|---|

### **Micingiriko yo tirhiwa hi vadyondzi ha un'weun'we**

Vadyondzi va fanele va ringeta swikombiso leswi landzelaka *hi ku tirhela emiehlekeweni*::

$$25 - 8 \qquad 36 - 7$$

Vadyondzi va fanele ku hlamusela maehleketelelo ya vona, xik.“eka 25 – 8, ndzi endlile 25 – 5 ku kuma 20 kutani ndzi susa 3 ku kuma17.”

Byela vadyondzi leswaku VA NGA hlayeli hi va1.

Vadyondzi lava va tikeriwaka ku kuma tinhlamulo hi ku tirha emiehlekeweni va nga dirowa ndzhati wa mintsengo lowu mpfaparhutiweke ku va pfuna.

Nyika lava va nga ta hatlisa swinene ku heta swo tala swo titoloveta hi swona:

$$73 - 6 \qquad 142 - 8 \qquad 81 - 4$$

### **Nghingiriko wo famba na wona ekaya: Phepha ro tirhela ra 2**

Endzhaku ka dyondzo nyika vadyondzi Phepha ro tirhela ra 2.

A wu fanelanga ku pimela vadyondzi nkarhi loko va ri karhi va tirha eka phepha leri. Xikongomela i ku nyika vadyondzi nkarhi lesawku va titoloveta hi micingiriko yo tsala ya leswi va swi endleke emiehlekeweni.

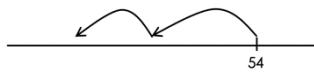
Vito:

**Ku Tlula ku ya eka Khume: Phepha Ro Tirhela Ra 2**

1.  $45 + 8 = \boxed{\phantom{00}}$



2.  $54 - 6 = \boxed{\phantom{00}}$



3.  $26 + \boxed{\phantom{00}} = 34$

4.  $27 + \boxed{\phantom{00}} = 27 + 3 + 5$

5.  $32 + 9 = 32 + 8 + \boxed{\phantom{00}}$

6.  $67 + 6 = 67 + 3 + \boxed{\phantom{00}}$

7.  $44 + \boxed{\phantom{00}} = 44 + 6 + 23$

8.  $32 - \boxed{\phantom{00}} = 32 - 2 - 5$

9.  $\begin{array}{ccc} +\boxed{\phantom{00}} & & +\boxed{\phantom{00}} \\ \hline 97 & \nearrow & 100 & \searrow & 144 \end{array}$

$$97 + \boxed{\phantom{00}} + \boxed{\phantom{00}} = 144$$

10.  $\begin{array}{ccc} -\boxed{\phantom{00}} & & -\boxed{\phantom{00}} \\ \hline 95 & \swarrow & 100 & \searrow & 153 \end{array}$

$$153 - \boxed{\phantom{00}} - \boxed{\phantom{00}} = 95$$

### **Tinotsi ta Mudyondzisi**

Laha u nga endla tinotsi hi dyondzo na ku kombisa leswaku i vadyondzi vahi lava va ha lavaka ku pfuniwa hi qhingha ra ku tlula ku ya eka khume.

Nakambe u nga endla tinotsi ta timhaka tin'wana na tin'wana leti u lavaka ku ti langutisa eka xisungula dyondzo lexi landzelaka

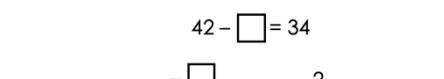
**KU TLULA KU YA EKA KHUME: XISUNGULA DYONDZO XA 8****Xitoloveto xa Menthelo xa Minete yi1**

Tibondo to ya fika eka 10: Swivulwa swa tinomboro ku suka eka dayagiramu ya bara

|   |   |   |   |    |  |   |   |    |  |
|---|---|---|---|----|--|---|---|----|--|
| Mudyondzisi: Leyi i dayagiramu ya bara naswona yi kombal eswaku 7 loko yi hlanganisiwa na 3 yi endla 10.<br><br>Hi nga vona nakambe leswaku $10 - 7 = 3$ hi ku langutisa dayagiramu.  | Tsala      leswi      landzelaka<br>exitsalelwensi:<br><br><table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>7</td><td>3</td></tr><tr><td colspan="2">10</td></tr></table>   | 7 | 3 | 10 |  |   |   |    |  |
| 7   | 3   |   |   |    |  |   |   |    |  |
| 10  |   |   |   |    |  |   |   |    |  |
| Mudyondzisi: kutani hi yihi nomboro leyi susiwaka eka 10 ku hi nyika 3?<br><br>Vadyondzi: 7<br><br>Mudyondzisi: Kutani, hi yihi nomboro leyi susiwaka eka 10 ku hi nyika 7?<br><br>Vadyondzi: 3<br><br>Mudyondzisi u kombetela eka nkhakhuleto wun'wana na wun'wana exitsalelwensi kutani ttilasi yi nyika nomboro leyi kayivelaka.<br><br>Yana emahlweni u vutisa ttilasi, hi marito, tirhisa swikombiso swotala u tirhisa tibondo ta khume:<br><br>Hi yihi nomboro leyi susiwaka eka 10 ku hi nyika 1?<br>Hi yihi nomboro leyi susiwaka eka 10 ku hi nyika 9?<br>Hi yihi nomboro leyi susiwaka eka 10 ku hi nyika 2?<br>Hi yihi nomboro leyi susiwaka eka 10 ku hi nyika 8?<br>Hi yihi nomboro leyi susiwaka eka 10 ku hi nyika 4?<br>Hi yihi nomboro leyi susiwaka eka 10 ku hi nyika 6? | Lulamisa xitsalelo hi swikombiso leswi landzelaka:<br><br><table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>2</td><td>8</td></tr><tr><td colspan="2">10</td></tr></table> <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td>6</td><td>4</td></tr><tr><td colspan="2">10</td></tr></table><br>10 - $\square$ = 6<br>10 - $\square$ = 4<br>10 - $\square$ = 2<br>10 - $\square$ = 8 | 2 | 8 | 10 |  | 6 | 4 | 10 |  |
| 2   | 8   |   |   |    |  |   |   |    |  |
| 10  |   |   |   |    |  |   |   |    |  |
| 6   | 4   |   |   |    |  |   |   |    |  |
| 10  |   |   |   |    |  |   |   |    |  |

**Nongonoko wa Nghingiriko**

Eka dyondzo leyi hi tirhisa qhingga ra ku tlula ku ya eka khume ku hlamula minkhakhuleto ya ku susa.

|  |   |
|--|---|
| Tirhisa ku tlula ku ya eka khume ku hlamula<br><br>$42 - \square = 34$<br><br>Dirowa ndzhati wa mintsengo leyi kombaka '42' na '34'.<br><br>Mudyondzisi: Hi yihi nomboro ya andziso wa khume leyi vaka kona ku nga si va na 42?<br><br>Vadyondzi: 40<br><br>Kombisa '40' eka ndzhati wa mintsengo.<br><br>Mudyondzisi: Eka 42 hi susa nomboro yihi ku kuma 40?<br><br>Vadyondzi: 2<br><br>Tsala '2' eka buloko leyi nga ehenhla ka ntlulo. | $42 - \square = 34$<br><br><br>$42 - \square = 34$<br><br><br>$42 - \square = 34$<br><br> |
|--|---|

Mudyondzisi: Hi yihi nomboro leyi hi yi susaka eka 40 ku kuma 34?

Vadyondzi: 6

Loko vadyondzi va tikeriwa hi xikombiso lexi, va vutisi, "Eka 10 hi susa nomboro yihi ku kuma 4?"

Vadyondzi va fanele va swi kota ku hlamula ku '6', kutani va kombise leswaku leswi swa fana eka tinomboro hinkwato ta andziso wa khume;

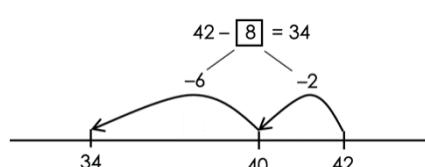
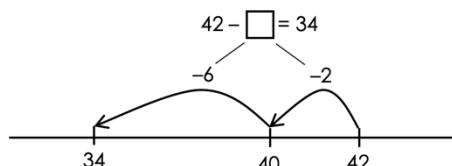
kutani:  $10 - 6 = 4$ ;  $20 - 6 = 14$ ;  $30 - 6 = 24$ ;  $40 - 6 = 34$  na sw.

Mudyondzisi: Hi yihi nomboro leyi hi yi kumaka loko hi hlanganisa 6 na 2? (kombetela eka 6 na 2 eka dayagiramu)

Vadyondzi: 8

Mudyondzisi: Kutani, hi susa nomboro yihi eka 42 ku kuma 34?

Vadyondzi: 8



### **Migingiriko yo tirhiwa hi vadyondzi ha un'weun'we**

Vadyondzi va fanele va ringeta swikombiso leswi landzelaka *hi ku tirhela emiehlekeweni*::

$$35 - \square = 28 \quad 72 - \square = 67$$

Vadondzisi va fanele va hlamusela maehleketelelo ya vona, xik. "eka  $35 - \square = 28$ , nomboro ya andziso wa khume leyi va ka kona ku nga si va na 35 i 30, kutani ndzi susa 5 ku ya eka 30 kutani ndzi fanele ndzi susa 2 ku ya eka 28. 5 yi hlanganisiwa na 2 i 7."

Byela vadyondzi leswaku VA NGA hlayeli hi va1.

Vadyondzi lava va tikeriwaka ku kuma tinhlamulo hi ku tirha emiehlekeweni va nga dirowa ndzhati wa mintsengo lowu mpfaparhutiweke ku va pfuna.

### **Vhidiyoyo Seketela**

Ku Tlula Ku Ya eka Khume 8



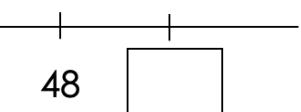
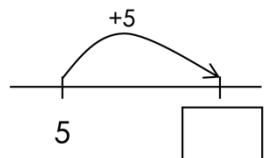
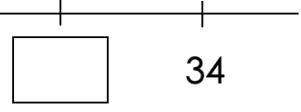
<https://youtu.be/9YSl0ijDOso>



Vito:

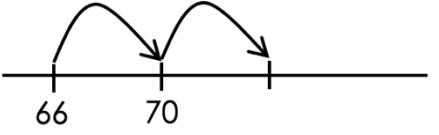
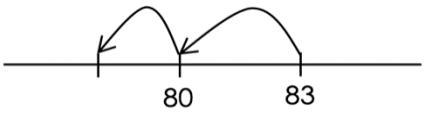
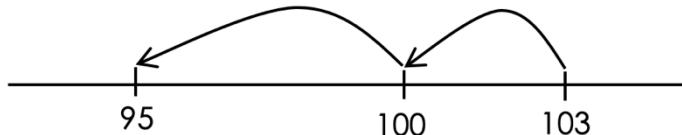
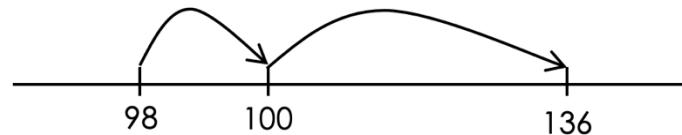
**Ku Tlula ku ya eka Khume: Xikambelwana Emakumu ka Dyondzo****XIYENGE XA 1**

Timinete ti2 eka papila leri

|  |   |                      |                      |      |                      |  |  |  |  |   |
|--|---|----------------------|----------------------|------|----------------------|--|--|--|--|---|
| 1. $6 + 4 =$ <input type="text"/>  | 11. $50 + 7 =$ <input type="text"/>   |                      |                      |      |                      |  |  |  |  |   |
| 2. $2 + 8 =$ <input type="text"/>  | 12. $3 + 60 =$ <input type="text"/>   |                      |                      |      |                      |  |  |  |  |   |
| 3. $10 = 7 +$ <input type="text"/>   | 13. $40 - 7 =$ <input type="text"/>   |                      |                      |      |                      |  |  |  |  |   |
| 4. 8 i yintsongo eka 10 hi <input type="text"/>  | 14. $40 + 8 =$ <input type="text"/>   |                      |                      |      |                      |  |  |  |  |   |
| 5. <table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">2</td> <td style="width: 50%;"></td> <td style="width: 25%;"><input type="text"/></td> </tr> <tr> <td colspan="3"><br/></td> </tr> <tr> <td colspan="3" style="font-size: 2em;">10</td> </tr> </table> | 2   |                      | <input type="text"/> | <br> |                      |  | 10                                     |  |  | Hi yihi nomboro ya andziso wa 10 leyi landzelaka??<br><br>15.  |
| 2  |   | <input type="text"/> |                      |      |                      |  |  |  |  |   |
| <br>   |   |                      |                      |      |                      |  |  |  |  |   |
| 10   |   |                      |                      |      |                      |  |  |  |  |   |
| 6.    | 16. $100 + 27 =$ <input type="text"/>   |                      |                      |      |                      |  |  |  |  |   |
| 7. $10 - 5 =$ <input type="text"/>   | 17. Hi yihi nomboro ya andziso wa 10 leyi rhangelaka 34?<br><br> |                      |                      |      |                      |  |  |  |  |   |
| 8. $10 - 3 =$ <input type="text"/>   | 18. <input type="text"/> + 8 = 50   |                      |                      |      |                      |  |  |  |  |   |
| 9. <table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 10%;">1</td> <td style="width: 90%;">9</td> </tr> <tr> <td colspan="2"><br/></td> </tr> <tr> <td colspan="2"><input type="text"/></td> </tr> </table>  | 1   | 9                    | <br>                 |      | <input type="text"/> |  | 19. $30 -$ <input type="text"/> $= 27$ |  |  |   |
| 1  | 9   |                      |                      |      |                      |  |  |  |  |   |
| <br>   |   |                      |                      |      |                      |  |  |  |  |   |
| <input type="text"/>   |   |                      |                      |      |                      |  |  |  |  |   |
| 10. <input type="text"/> + 10 = 10   | 20. $87 = 80 +$ <input type="text"/>  |                      |                      |      |                      |  |  |  |  |   |

**Ntsengo 20****Ku Tlula ku ya eka Khume: Xikambelwana Emakumu ka Dyondzo****XIYENGE XA 2**

Timinete ti2 eka papila leri

|                   |   |  |
|-------------------|---|--|
| 1.                | $66 + 8 = \boxed{\phantom{00}}$   |  |
| 2.                | $83 - 5 = \boxed{\phantom{00}}$   |  |
| 3.                | $93 - 7 = \boxed{\phantom{00}}$   |  |
| 4.                | $67 + \boxed{\phantom{00}} = 73$  |  |
| 5.                | $\boxed{\phantom{00}} + 7 = 82$   |  |
| 6.                | $67 + 5 = 67 + 3 + \boxed{\phantom{00}}$  |  |
| 7.                | $94 - \boxed{\phantom{00}} = 94 - 4 - 2$  |  |
| 8.                | $98 + 56 = 98 + 2 + \boxed{\phantom{00}}$   |  |
| 9.                |  |  |
|                   | $103 - \boxed{\phantom{00}} = 95$   |  |
| 10.               |  |  |
|                   | $98 + \boxed{\phantom{00}} = 136$   |  |
| <b>Ntsengo 10</b> |   |  |

## **MAQHINGHA YA KU TLULA**

### **Manghenelo**

Nkongomiso eka swisungula dyondzo swa mune leswi swo sungula wu le ka ku hlanganisa hi ku tirhisa maqhingha ya ku tlula. Eka swisungula dyondzo swa mune leswi landzelaka, nkongomiso wu le ka ku susa hi ku tirhisa maqhingha ya ku tlula. Yin'wana ya mintirho yi fanele ku rhangeriwa hi mudyondzisi exitsalelwani kasi yin'wana i ya leswaku vadyondzi va tiendlela va ri voxé.

### **Vuswikoti Byo Tsundzuka hi ku Hatlisa**

Ku na tsevu wa vuswikoti byo tsundzuka hi ku hatlisa lebyi vadyondzi va faneleke ku dyondza eka maqhingha ya ku tlula:

- ku hlayela emahlweni kumbe endzhaku hi va10 ku suka eka nomboro yin'wana na yin'wana (xik. 12, 22, 32, or 57, 47, 37, ...)
- ku hlanganisa kumbe ku susa 10 ku suka eka nomboro yin'wana na yin'wana (xik.  $43 + 10 = 53$  kumbe  $89 - 10 = 79$ )
- ku hlanganisa nomboro ya andziso wa khume eka nomboro yin'wana na yin'wana (xik.  $61 + 20 = 81$ )
- ku susa nomboro ya andziso wa khume ku suka eka nomboro yin'wana na yin'wana (xik.  $46 - 30 = 16$ )
- ku tlula ku ya eka nomboro ya andziso wa khume leyi landzelaka endzhaku ka nomboro yo karhi (xik.  $32 \rightarrow 40$ )
- ku tlula ku ya eka nomboro ya andziso wa khume leyi veke kona ku nga si va na nomboro yo karhi (xik.  $56 \rightarrow 50$ )

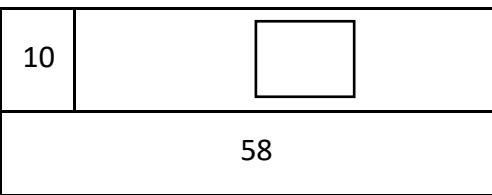
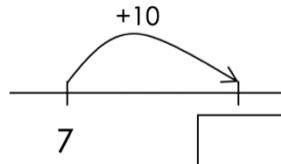
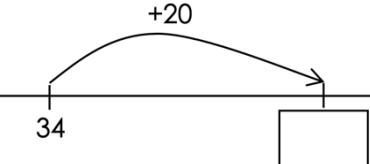
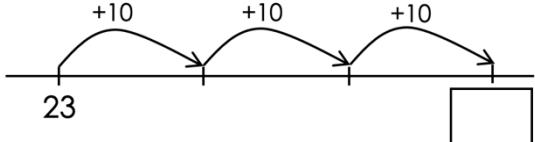
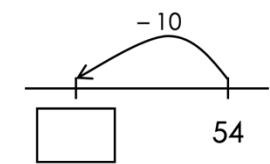
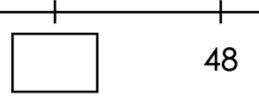
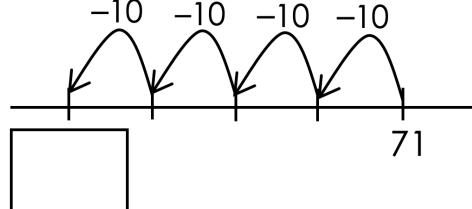
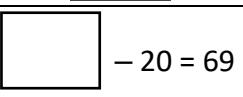
## Maqhingha Ya Ku Tlula

Vito:

### Maqhingha ya ku Tlula: Xikambelwana ku nga si sungula Dyondzo

XIYENGE XA 1

Timinete ti2 eka papila leri

|  |  |
|--|--|
| 1. Hetisa nomboro leyi kayivelaka.<br>14, 24, 34, 44, <input type="text"/>             | 11. Hi yihi nomboro ya andziso wa 10 leyi landzelaka?<br> |
| 2. Hetisa nomboro leyi kayivelaka.<br>79, 69, 59, 49, <input type="text"/>             |  |
| 3. $6 + 30 =$ <input type="text"/>   | 12.    |
| 4. $57 - 10 =$ <input type="text"/>  |  |
| 5.    | 13.    |
| 6.  | 14. $16 + 30 =$ <input type="text"/><br>Hi yihi nomboro ya andziso wa 10 leyi rhangelaka 48?   |
| 7.  | 15.   |
| 8. $36 +$ <input type="text"/> $= 40$  | 16. $79 - 40 =$ <input type="text"/><br>17. $38 -$ <input type="text"/> $= 18$   |
| 9.  | 18.    |
| 10. $31 - 20 =$ <input type="text"/>   | 19. $37 +$ <input type="text"/> $= 77$<br>20. <input type="text"/> $+ 20 = 66$   |
| <b>Ntsengo 20</b>  |  |

**Maqhingha ya ku Tlula: Xikambelwana ku nga si sungula Dyondzo**

XIYENGE XA 2

Timinete ti3 eka papila leri

|                                    |        |
|------------------------------------|--------|
| <br>1.                             | <br>2. |
| <br>3.                             |        |
| $45 + \boxed{\quad} + 7 = 82$      |        |
| <br>4.                             |        |
| $53 - \boxed{\quad} - 4 = 29$      |        |
| $57 + 26 = \boxed{\quad}$          |        |
| $83 - 24 = \boxed{\quad}$          |        |
| $19 + \boxed{\quad} = 41$          |        |
| $62 - \boxed{\quad} = 47$          |        |
| $61 - 32 = 61 - \boxed{\quad} - 2$ |        |
| $74 - \boxed{\quad} = 74 - 20 - 5$ |        |
| <b>Ntsengo 10</b>                  |        |

## MAQHINGHA YA KU TLULA: XISUNGULA DYONDZO XA 1

### Xitoloveto xa Menthele xa Minete yi1

a. Xintlangwana xa ku rhendzeleka hi tlilasi ka 10 ku tlula nomboro leyi a yi vuriwile (va nga cincana tlilasi hinkwayo va ri karhi va hlamlula)

Mudyondzisi u vula nomboro kutani vadyondzi rhendzeleka hi tlilasi ka 10 ku tlula nomboro leyi a yi vuriwile.

Mudyondzisi: 16

Mudyondzi wa vu1: 26 → Mudyondzi wa vu2: 36 → Mudyondzi wa vu3: 46 → Mudyondzi wa vu4: 56 hi ndlela yaleyo.

b. Xintlangwana xa ku rhendzeleka hi tlilasi ehansi ka nomboro leyi a yi vuriwile hi 10 (va nga cincana tlilasi hinkwayo va ri karhi va hlamlula)

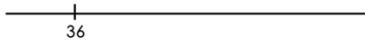
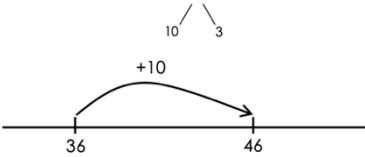
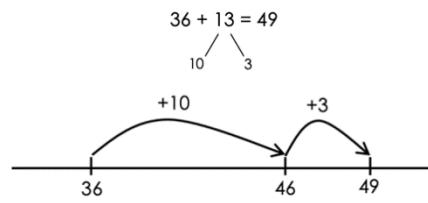
Mudyondzisi u vula nomboro kutani vadyondzi rhendzeleka hi tlilasi ehansi ka nomboro leyi a yi vuriwile hi ka 10.

Mudyondzisi: 128

Mudyondzi wa vu1: 118 → Mudyondzi wa vu2: 108 → Mudyondzi wa vu3: 98 → Mudyondzi wa vu4: 88 hi ndlela yaleyo.

### Nongonoko wa Nghingiriko

Eka dyondzo leyi hi dyondzisa ro sungula maqhingha ya ku tlula ku ololoxa swiphiqo swa ku hlanganisa.

|   |  |
|---|--|
| <p>Xiphiko: <math>36 + 13</math></p> <p>Tsala '36 + 13 =' exitsalelwani.</p> <p>Kombisa 36 ekusuhi na le ku sunguleni ka ntila (hikuva ku hlanganisa swi vula leswaku hi ta tlulela emahlwени).</p>   | $36 + 13 =$<br>                          |
| <p>Mudyondzisi: Hi fanele hi tlula ka 13 ku ya emahlweni. A hi tlhantlheni 13 ku huma 10 na 3. Hi kuma yini eka <math>36 + 10</math>?</p> <p>Vadyondzi: 46</p> <p>Dirowa ntlulo wa <math>+10</math>, lowu nga ta yima eka 46.</p>   | $36 + 13 =$<br>                          |
| <p>Mudyondzisi: Ha ha fanele ku tlula ka 3 ku ya emahlweni. Hi kuma yini loko hi hlanganisa 46 na 3?</p> <p>Vadyondzi: 49</p> <p>Tsala eka ndzhati wa mintsengo hi ku ya hi laha swi kombisiweke ha kona.</p> <p>Mudyondzisi: Hi landzelela maendlelo lawa:</p> <ul style="list-style-type: none"> <li>• Hi <b>kombisa</b> nomboro yo sungula</li> <li>• Hi <b>tlhantlha</b> nomboro ya vumbirhi leyi faneleke ku hlanganisiwa</li> <li>• Hi <b>tlula</b> vukhume ku sungula kutani ku landzela vun'we</li> </ul> | $36 + 13 = 49$<br><br>$36 + 10 + 3 = 49$ |

|   |  |
|---|--|
| <ul style="list-style-type: none"><li>• Hi nyika <b>nhlamulo</b></li></ul> <p>Mudyondzisi: Kutani 36 + 13 yi humesa nhlamulo yo fana na loko hi hlanganisa 36 + 10 + 3 = 49 hikuva hi hlanganisile 13 hi ku sungula hi hlanganisa 10, ku landzela 3.</p> <p>Tsala swivulwa swa tinomboro hi ku ya hi laha swi kombisiweke hakona.</p> |  |
|---|--|

### **Migungiriko yo tirhiwa hi vadyondzi ha un'weun'we**

Vadyondzi va fanele va ringeta swikombiso leswi landzelaka *hi ku tirhela emiehlekeweni*::

$$64 + 12 \quad 24 + 15$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. "eka 64 + 12, ndzi hlanganisa 10 eka 64 ku kuma 74, kutani ndzi hlanganisa 2, kutani nhlamulo i 76."

Byela vadyondzi leswaku VA NGA hlayeli hi va 1.

Vadyondzi lava tikeriwaka ku tirha leswi emiehlekeweni va nga dirowa mpfapfarhuto wa mindzhati ya mintsengo leswaku yi va pfuna.

### **Vhidiyo yo Seketela**

Maqhingha ya ku Tlula ya 1



<https://youtu.be/FPTVoIFFd3k>

## MAQHINGHA YA KU TLULA: XISUNGULA DYONDZO XA 2

### Xitoloveto xa Menthlele xa Minete yi1

Pop Fizz: yikulu hi 10 kumbe yintsongo hi 10

- a. Mudyondzisi u vula aku 'pop' vadyondzi va ku 'fizz'; kutani mudyondzisi a vula nomboro, vadyondzisi va hlamula hi ku vula nomboro leyi nga **yikulu hi 10** (kumbe nomboro leyi nga yikulu kambe yi ri ya andziso wa 10):

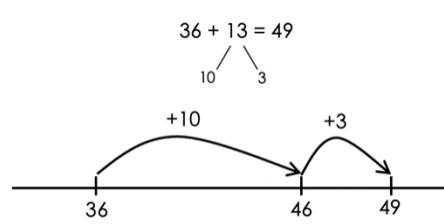
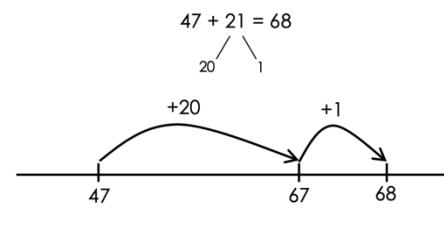
|                  |   |  |
|------------------|---|--|
| Mudyondzisi: pop | → | Vadyondzi: fizz                        |
| Mudyondzisi: 3   | → | Vadyondzi: 13                          |
| Mudyondzisi: pop | → | Vadyondzi: fizz                        |
| Mudyondzisi: 53  | → | Vadyondzi: 63      hi ndlela yaleyo... |

- b. b. Mudyondzisi u vulaaku 'pop' vadyondzi va ku 'fizz'; kutani mudyondzisi a vula nomboro, vadyondzisi va hlamula hi ku vula nomboro leyi nga **yintsongo hi 10** (kumbe nomboro leyi nga yintsongo kambe yi ri ya andziso wa 10):

|                  |   |   |
|------------------|---|---|
| Mudyondzisi: pop | → | Vadyondzi: fizz                         |
| Mudyondzisi: 49  | → | Vadyondzi: 39                           |
| Mudyondzisi: pop | → | Vadyondzi: fizz                         |
| Mudyondzisi: 78  | → | Vadyondzi: 68      hi ndlela yaleyo ... |

### Nongonoko wa Nghingiriko

Eka dyondzo leyi hi tirhisa maqhingha ya ku tlula ku ololoxa swiphiqo swa ku hlanganisa.

|   |   |
|---|---|
| <p>Kombela vadyondzi ku ringeta ku tsundzuka ku suka eka dyondzo ya tolo: hi hlamurise ku yini <math>36 + 13</math>?<br/>         Sungula hi ku dirowa ntila kutani u kombisa '36'.<br/>         Pfumelela vadyondzi ku hlamusela maendlelo ya vona eka lava va tshameke na vona, kutani u kombela vambirhi ku swi kombisa exitsalelwani.<br/>         Tsundzuxa vadyondzi matirhelo lama va ma dyondzeke nkarhi lowu nga hundza: <b>kombisa, tlhantlha, tlula na nhlamulo</b>.</p>   | <p>Xifaniso, lexi heleleke xi kombisiwile laha hansi::</p> $36 + 13 = 49$                     |
| <p>Kutani, kombisa exitsalelwani matirhiselo ya maqhingha ya ku tlula ku hlamula: <math>47 + 21</math></p> <ul style="list-style-type: none"> <li>• <b>Kombisa</b> 47 eka ndzhati wa mintsengo.</li> <li>• <b>Tlhantlha</b> 21 yi humesa 20 na 1</li> <li>• <b>Tlula</b> 20 u ya emahlweni u tlhela u <b>tlula 1</b> ku ya emahlweni. Vadyondzi van'wana va ta endla mintlulo mimbirhi ya va10 ku ya emahlweni ematshan'weni ya ntlulo wun'we wa ku ya emahlweni wa 20 – leswi swi lulamile.</li> <li>• Nyika <b>nhlamulo</b>.</li> </ul> | <p>Xifaniso, lexi heleleke xi kombisiwile laha hansi::</p> $47 + 21 = 68$  $47 + 20 + 1 = 68$ |

## Maqhingha Ya Ku Tlula

|  |  |
|--|--|
| Mudyondzisi: 47 + 21 yi humesa nhlamulo yo fana<br>na 47 + 20 + 1 = 68   |  |
| Tsala swivulwa swa tinomboro hi ku ya hi laha swi<br>kombisiweke hakona. |  |

### **Mgingiriko yo tirhiwa hi vadyondzi ha un'weun'we**

Vadyondzi va fanele va ringeta swikombiso leswi landzelaka *hi ku tirlhela emiehleketweni*:

$$43 + 24 \quad 31 + 25$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik.“eka 43 + 24, ndzi hlanganisa 20 ku kuma 63, kutani ndzi hlanganisa 4, nhlamulo i 67.”

Byela vadyondzi leswaku VA NGA hlayeli hi va 1.

### **Vhidiyo yo Seketela**

Maqhingha ya ku Tlula ya 2



<https://youtu.be/6RkP5bSplNQ>

Maqhingha Ya Ku Tlula

**Vhidiyo yo Seketela**

Maqhingha ya ku Tlula ya 3



<https://youtu.be/JAGey218ADw>

## MAQHINGHA YA KU TLULA: XISUNGULA DYONDZO XA 3

### Xitoloveto xa Menthele xa Minete yi1

Pop Fizz: yikulu hi 10 kumbe yintsongo hi 10; yikulu hi 20 kumbe yintsongo hi 20

### Nongonoko wa Ngchingiriko

Eka dyondzo leyi hi ndlandlamuxa maqhingha ya ku tlula ku katsa endlelo ro tlula ku ya eka khume.

|  |   |
|--|---|
| <p>Kombisa exitsalelwani matirhiselo ya maqhingha ya ku tlula ku hlamula: <math>35 + 16</math></p> <p>Tsala xivulwa xa nomboro exitsalelwani u tlhela u dirowa ndzhati wa mintsengo wo pfumala tinomboro.</p> <ul style="list-style-type: none"> <li>• <b>Kombisa</b> 35 eka ndzhati wa mintsengo.</li> <li>• <b>Tlhantlha</b> 16 yi huma 10 na 6</li> <li>• <b>Tlula</b> 10 ku ya emahlwani ku ya fika eka 45. <b>Tlula</b> 6 leyi saleke hi ku tlula ku ya eka nomboro ya andziso wa 10 leyi landzelaka (leyi ku nga 50). Kutani 6 yi lava ku tlhantlhiwa yi humesa 5 na 1. <b>Tlula</b> ku ya emahlwani ka5 na ka1.</li> <li>• Nyika <b>nhamulo</b>.</li> </ul> <p>Mudyondzisi: <math>35 + 16</math> yi humesa nhamulo yo fana na <math>35 + 10 + 6 = 51</math> kumbe <math>35 + 10 + 5 + 1 = 51</math>.</p> <p>Tsala swivulwa swa tinomboro hi ku ya hi laha swi kombisiweke hakona.</p> | <p>Xifaniso lexi heleleke xi kombisiwile laha hansi:</p> <div style="text-align: center;"> <math display="block">35 + 16 = 51</math> <math display="block">35 + 10 + 6 = 51</math> <math display="block">35 + 10 + 5 + 1 = 51</math> </div> |
|--|---|

### Migungiriko yo tirhiwa hi vadyondzi ha un'weun'we

Vadyondzi va fanele va ringeta swikombiso leswi landzelaka *hi ku tirhela emiehlekeweni*::

$$39 + 23 \quad 68 + 35$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. “eka 39 + 23, ndzi hlanganisa 20 eka 39 ku kuma 59, kutani ndzi hlanganisa 1 ku ya eka 60, ndzi tlhela ndzi hlanganisa 2, kutani nhamulo i 62.”

Byela vadyondzi leswaku VA NGA hlayeli hi va 1.

Nyika lava va nga ta hatlisa swinene ku heta swo tala swo titoloveta hi swona:

$$36 + 28 \quad 47 + 34$$

## MAQHINGHA YA KU TLULA: XISUNGULA DYONDZO XA 4

### Xitoloveto xa Menthela xa Minete yi1

Ku tlula ku ya eka nomboro leyi **landzelaka** ya andziso wa khume

Leswi a hi nkatsakanyo ku ya eka vukhume bya le kusuhi kambe i ku tlula ku ya eka nomboro leyi **landzelaka** ya andziso wa khume eka ndzhati wa mintsengo.

"Hi yihi nomboro leyi **landzelaka** ya andziso wa khume **endzhaku ka...?**"

Mudyondzisi: 47 → Vadyondzi: 50

Mudyondzisi: 55 → Vadyondzi: 60

Mudyondzisi: 32 → Vadyondzi: 40 hi ndlela yaleyo...

### Nongonoko wa Nghingiriko

Eka dyondzo leyi hi tirhisa maqhingha ya ku tlula ku ololoxa swiphiko swa nomboro leyi kayivelaka.

Kombisa exitsalelwani matirhiselo ya maqhingha ya ku tlula ku hlamula:  $23 + \square = 37$  hi ndlela leyi **landzelaka**:

Tsala xivulwa xa nomboro exitsalelwani u tlhela u dirowa ndzhati wa mintsengo wo pfumala tinomboro.

Kombisa '23' eka ndzhati wa mintsengo.

Mudyondzisi: Hi fanele hi tlula ku ya emahlweni hi ya eka 37.

Kombisa 37 eka ndzhati wa mintsengo.

Mudyondzisi: Hi wihi ntlulo wa vukhume, naswona hi wihi ntlulo wa vun'we, leyi hi faneleke ku yi endla?

Vadyondzi: Tlula 10 ku ya eka 33 naswona tlula 4 ku ya eka 37.

Dirowa mintlulo leyi eka ndzhati wa mintsengo.

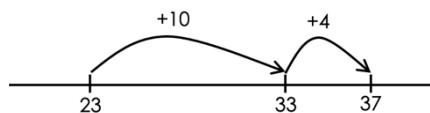
Mudyondzisi: Xana hi tlule kangani hinkwako?

Vadyondzi: 14

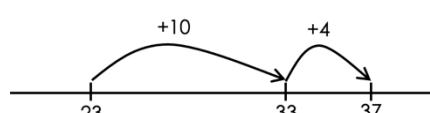
Tsala 14 eka buloko.

Mudyondzisi:  $23 + 10 + 4$  yi humesa nhlamulo yo fana na  $23 + 14 = 37$ .

$$23 + \square = 37$$



$$23 + \boxed{14} = 37$$



### Mgingiriko yo tirhiwa hi vadyondzi ha un'weun'we

Vadyondzi va fanele va ringeta swikombiso leswi landzelaka *hi ku tirhela emiehlekeweni*:

$$45 + \square = 67 \quad 67 + \square = 81$$

Maqhingha Ya Ku Tlula

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. “eka 45 +  $\square$  = 67, ndzi hlanganisa 20 eka 45 ku kuma 65, kutani ndzi hlanganisa 2 ku kuma 67, kutani ku tlula hinkwaku i 22.”

Byela vadyondzi leswaku VA NGA hlayeli hi va 1.

Nyika lava va nga ta hatlisa swinene ku heta swo tala swo titoloveta hi swona:

$$45 + \square = 68 \quad 67 + \square = 83$$

### **Nghingiriko wo famba na wona ekaya: Phepha ro tirhela ra 1**

Emakumu ka dyondzo ya namuntlha nyika vadyondzi Phepha ro tirhela ra 1.

A wu fanelanga ku pimela vadyondzi nkarhi loko va endla nghingiriko lowu. Xikongomelo i ku nyika vadyondzi xitoloveto xo tsariwa xa ntirho lowu va wu endleke emiehlekeweni.

### **Vhidiyo yo Seketela**

Maqhingha ya ku Tlula ya 4

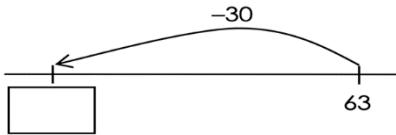
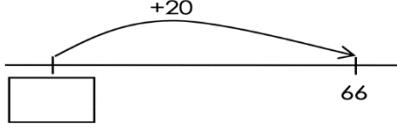
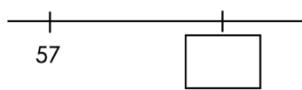
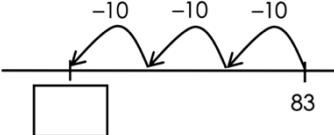
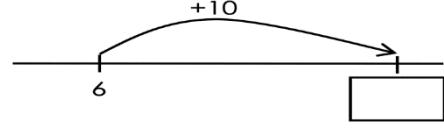
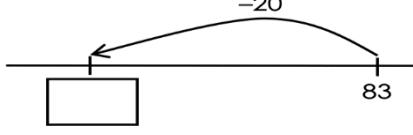
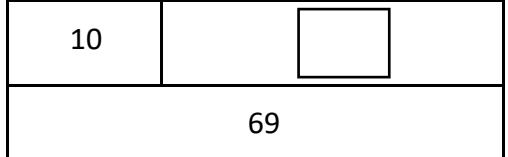
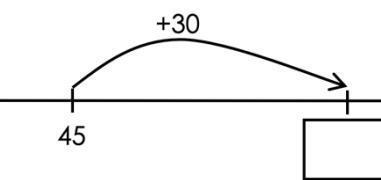
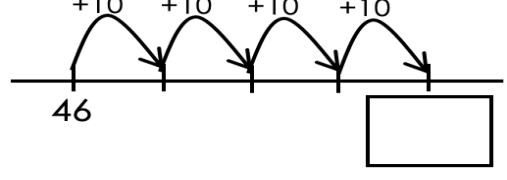


<https://youtu.be/A9vFXHWkzUo>

## Maqhingha Ya Ku Tlula

Vito:

### Maqhingha ya ku Tlula: Phepha Ro Tirhela Ra 1

|   |   |
|---|---|
| 1. $75 - 10 = \boxed{\phantom{00}}$   | 11. $14 + 50 = \boxed{\phantom{00}}$  |
| 2.   | 12.   |
| 3. $17 \quad 27 \quad 37 \quad \boxed{57}$  | 13. $86 \quad 76 \quad 66 \quad 56 \quad \boxed{\phantom{00}}$  |
| 4. $47 + \boxed{\phantom{00}} = 50$   | 14. $68 - \boxed{\phantom{00}} = 8$   |
| 5. Hi yihi nomboro ya andziso wa 10 leyi<br>andzelaka?<br> | 15.   |
| 6.    | 16.    |
| 7. $52 - 20 = \boxed{\phantom{00}}$   | 17. $4 + 50 = \boxed{\phantom{00}}$   |
| 8.   | 18.   |
| 9.   | 19. Hi yihi nomboro ya andziso wa 10 levi<br>rhangelaka37?<br> |
| 10. $45 + \boxed{\phantom{00}} = 85$  | 20. $97 - 60 = \boxed{\phantom{00}}$  |

### Tinotsi ta Mudyondzisi

Laha u nga endla tinotsi hi dyondzo na ku kombisa leswaku i vadyondzi vahi lava va ha lavaka ku pfuniwa hi maqhingha yo hambanahambana.

Nakambe u nga endla tinotsi ta timhaka tin'wana na tin'wana leti u lavaka ku ti langutisa eka xisungula dyondzo lexi landzelaka

Maqhingha Ya Ku Tlula

**Vhidiyo yo Seketela**

Maqhingha ya ku Tlula ya 5



<https://youtu.be/dFV5gmY68Sc>

## MAQHINGHA YA KU TLULA: XISUNGULA DYONDZO XA 5

### Xitoloveto xa Menthele xa Minete yi1

- Xintlangwana xa ku rhendzeleka hi tlilasi ka 10 ku tlula nomboro leyi a yi vuriwile
- Xintlangwana xa ku rhendzeleka hi tlilasi ehansi ka nomboro leyi a yi vuriwile hi 10

### Nongonoko wa Nghingiriko

Eka dyondzo leyi hi tirhisa maqhingha ya ku tlula ku ololoxa swiphiqo swa ku susa.

|  |  |
|--|--|
| <p>Xiphiqo: <math>43 - 12</math></p> <p>Tsala '43 - 12 =' exitsalelwani.</p> <p>Kombisa '43' ekusuhi na le makumu ka ntila (hikuva ku susa swi vula leswaku hi ta tlulela endzhaku).</p> <p>Mudyondzisi: Hi fanele hi tlula ka 12 ku ya endzhaku. A hi tlhantlheni 12 yi humesa 10 na 2. Hi yihi nhlamulo ya <math>43 - 10</math>?</p> <p>Vadyondzi: 33</p> <p>Endla ntlulo wa <math>-10</math> jump, laha u nga ta yima eka 33.</p> <p>Mudyondzisi: Ha ha fanele ku tlula ka 2 ku ya endzhaku. Hi yihi nhlamulo ya 33 hi susa 2?</p> <p>Vadyondzi: 31</p> <p>Tsala eka ndzhati wa mintsengo hi ku ya hi laha swi kombisiweke ha kona.</p> <p>Mudyondzisi: Hi susile 12 hi ku sungula hi susa 10 kutani hi susa 2.</p> <ul style="list-style-type: none"> <li>• Hi <b>kombisa</b> nomboro yo sungula</li> <li>• Hi <b>tlhantlha</b> nomboro ya vumbirhi</li> <li>• Hi <b>tlula</b> vukhume ku sungula kutani ku landzela vun'we (mintlulo ya ku ya endzhaku hikuva ha susa)</li> <li>• Hi nyika <b>nhlamulo</b></li> </ul> <p>Mudyondzisi: <math>43 - 12</math> yi na nhlamulo yo fana na <math>43 - 10 - 2 = 31</math>. Tsala swivulwa swa tinomboro hi ku ya hi laha swi kombisiweke hakona.</p> | <p><math>43 - 12 =</math></p> <p><math>43 - 12 =</math></p> <p><math>43 - 12 = 31</math></p> |
|--|--|

### Mgingiriko yo tirhiwa hi vadyondzi ha un'weun'we

Vadyondzi va fanele va ringeta swikombiso leswi landzelaka *hi ku tirhela emiehlekeweni*:

$$62 - 12 \quad 53 - 11$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. "eka  $62 - 12$ , ndzi susa 10 ku suka eka  $62$  ku kuma  $52$ , kutani ndzi susa 2, nhlamulo i  $50$ ."

Byela vadyondzi leswaku VA NGA hlayeli hi va 1.

## MAQHINGHA YA KU TLULA: XISUNGULA DYONDZO XA 6

### Xitoloveto xa Menthelo xa Minete yi1

a. Hlanganisa 10 (kumbe hlanganisa nomboro ya andziso wa 10)

Maendlelo ma fana na le ka 'yikulu eka 10', kambe swesi mudyondzisi u nyika xiphiqo xa 'hlanganisa 10'.

$$\begin{array}{ll} \text{Mudyondzisi: } 16 + 10 & \rightarrow \quad \text{Mudyondzi: } 26 \\ \text{Mudyondzisi: } 84 + 10 & \rightarrow \quad \text{Mudyondzi: } 94 \\ \text{Mudyondzisi: } 96 + 10 & \rightarrow \quad \text{Mudyondzi: } 106 \quad \text{hi ndlela yaleyo...} \end{array}$$

b. Susa 10 (kumbe susa nomboro ya andziso wa 10)

Maendlelo ma fana na le ka 'yintsongo eka 10', kambe swesi mudyondzisi u nyika xiphiqo xa 'susa 10'.

$$\begin{array}{ll} \text{Mudyondzisi: } 56 - 10 & \rightarrow \quad \text{Vadyondzi: } 46 \\ \text{Mudyondzisi: } 84 - 10 & \rightarrow \quad \text{Vadyondzi: } 74 \\ \text{Mudyondzisi: } 95 - 10 & \rightarrow \quad \text{Vadyondzi: } 85 \quad \text{hi ndlela yaleyo...} \end{array}$$

### Nongonoko wa Nghingiriko

Eka dyondzo leyi hi tirhisa maqhingha ya ku tlula ku hlamula minkhakhuleto ya ku susa

|  |  |
|--|--|
| <p>Kombela vadyondzi ku ringeta ku tsundzuka ku suka eka dyondzo ya tolo: hi hlamurise ku yini <math>43 - 12</math>?</p> <p>Pfumelela vadyondzi ku hlamusela maendlelo ya vona eka lava va tshameke na vona, kutani u kombela vambirhi ku swi kombisa exitsalelweni.</p> <p>Tsundzuxa vadyondzi matirhelo lama va ma dyondzeke nkarhi lowu nga hundza: <b>kombisa, tlhantlha, tlula (ku ya endzhaku) na nhlamulo.</b></p>  | <p>Xifaniso, lexi heleleke xi kombisiwile laha hansi:</p> $43 - 12 = 31$ |
| <p>Kombisa exitsalelweni matirhelo ya: <math>57 - 24</math></p> <p>Kombisa '57' eka ndzhati wa mintsengo.</p> <p>Tlhantlha 24 yi humesa 20 na 4.</p> <p>Tlula u ya endzhaku ka 20 u tlhela u tlula u ya endzhaku ka 4. Vadyondzi van'wana va ta endla mintlulo mimbirhi ya va 10 ku ya endzhaku ematshan'weni ya ntlulo wun'we wa ku ya endzhaku wa 20 – leswi swi lulamile.</p> <p>Tsala mhlamulo.</p> <p>Mudyondzisi: <math>57 - 24</math> i nhlamulo yo fana na <math>57 - 20 - 4 = 33</math>.</p> <p>Tsala xivulwa xa nomboro hi ku ya hi laha swi kombisiweke hakona.</p> | <p>Xifaniso, lexi heleleke xi kombisiwile laha hansi:</p> $57 - 24 = 33$ |

### Migungiriko yo tirhiwa hi vadyondzi ha un'weun'we

Vadyondzi va fanele va ringeta swikombiso leswi landzelaka *hi ku tirhela emiehlekeweni*:

Maqhingha Ya Ku Tlula

95 – 23      43 – 22

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. “eka 95 – 23, ndzi susa 20 eka 95 ku kuma 75, kutani ndzi susa 3, nhlamulo i 72.”

Byela vadyondzi leswaku VA NGA hlayeli hi va 1.

Vadyondzi lava tikeriwaka ku tirha leswi emiehlekeweni va nga dirowa mpfapfarhuto wa mindzhati ya mintsengo leswaku yi va pfuna.

### **Vhidiyo yo Seketela**

Maqhingha ya ku Tlula ya 6



<https://youtu.be/JQq2zL6pwCM>

### **Vhidiyo yo Seketela**

Maqhingha ya ku Tlula ya 7



<https://youtu.be/uFGzuToKGkA>

## MAQHINGHA YA KU TLULA: XISUNGULA DYONDZO XA 7

### Xitoloveto xa Menthele xa Minete yi1

Ku tlula ku ya eka nomboro ya andziso wa khume leyi **rhangelaka**

Leswi a hi nkatsakanyo ku ya eka vukhume bya le kusuhi kambe i ku tlula ku ya eka nomboro ya andziso wa khume leyi **rhangelaka** eka ndzhati wa mintsengo.

“Ndzi nyike nomboro ya andziso wa khume leyi **rhangelaka...**”

$$\begin{array}{ll} \text{Mudyondzisi: 26} & \rightarrow \\ \text{Mudyondzisi: 53} & \rightarrow \end{array}$$

$$\begin{array}{ll} \text{Vadyondzi: 20} \\ \text{Vadyondzi: 50} & \text{hi ndlela yaleyo...} \end{array}$$

### Nongonoko wa Nghingiriko

Eka dyondzo leyi hi ndlandlamuxa maqhingha ya ku tlula ku katsa endlelo ra tlula ku ya eka khume.

|   |  |
|---|--|
| <p>Kombisa exitsalelwani lesi ku tlurisiwaka xiswona ku ya eka khume ku hlamula: <math>62 - 17</math></p> <p>Kombisa ‘62’ eka ndzhati wa mintsengo wo pfumala tinomboro.</p> <p>Tlhantlha 17 ku huma 10 na 7.</p> <p>Tlula u ya endzhaku ka 10 ku ya fika eka 52.</p> <p>Tlula u ya endzhaku ka 7 loku saleke hi ku tlula ku ya eka andziso 10 lowu rhangaka (nomboro ya kona 50).</p> <p>Kutani 7 yi lava ku tlhantlhiwa yi humesa 2 na 5.</p> <p>Tlula u ya endzhaku ka 2 u tlhela u tlula ka 5.</p> <p>Tsala nhlamulo.</p> | <p>Xifaniso, lexi heleleke xi kombisiwile laha hansi::</p> $62 - 17 = 45$ $\begin{array}{c} 62 \\ - 17 \\ \hline 45 \end{array}$ $62 - 10 - 2 - 5 = 45$ $\begin{array}{c} 62 \\ - 10 \\ - 2 \\ - 5 \\ \hline 45 \end{array}$ |
| <p>Mudyondzisi: <math>62 - 17</math> yi na nhlamulo yo fana na:<br/> <math>62 - 10 - 2 - 5 = 45</math></p>  | $62 - 10 - 7 = 45$<br>$62 - 10 - 2 - 5 = 45$   |

### Mgingiriko yo tirhiwa hi vadyondzi ha un’weun’we

Vadyondzi va fanele va ringeta swikombiso leswi landzelaka *hi ku tirhela emiehlekeweni*::

$$75 - 18 \quad 93 - 14$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. “eka  $75 - 18$ , ndzi susa 10 eka 75 ku kuma 65, kutani ndzi susa 5 ku kuma 60, ndzi tlhela ndzi susa 3, kutani nhlamulo i 57”.

Byela vadyondzi leswaku VA NGA hlayeli hi va 1.

Loko vadyondzi van’wana vo heta mintirho leyi hi ku hatlisa swinene, va nyike swotala ku titoloveta hi swona:

$$73 - 28 \quad 62 - 35$$

### Nghingiriko wo famba na wona ekaya: Phepha ro tirhela ra 2

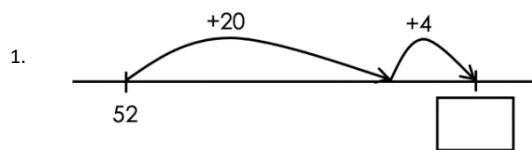
Emakumu ka dyondzo ya namuntlha nyika vadyondzi Phepha ro tirhela ra 2.

A wu fanelanga ku pimela vadyondzi nkarhi loko va endla nghingiriko lowu. Xikongomelo i ku nyika vadyondzi xitoloveto xo tsariwa xa nghingiriko lowu va wu endleke emiehlekeweni.

## Maqhingha Ya Ku Tlula

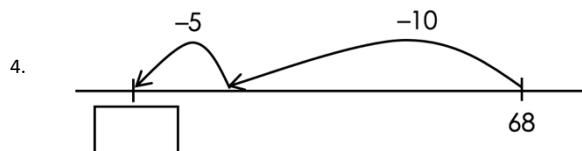
Vito:

### Maqhingha ya ku Tlula: Phepha Ro Tirhela Ra 2



2.  $45 + 8 = \boxed{\quad}$

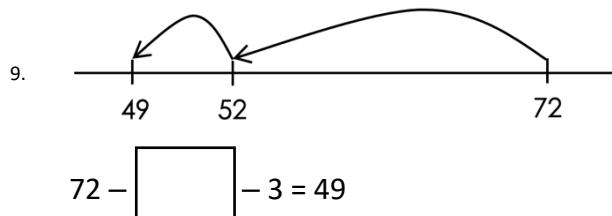
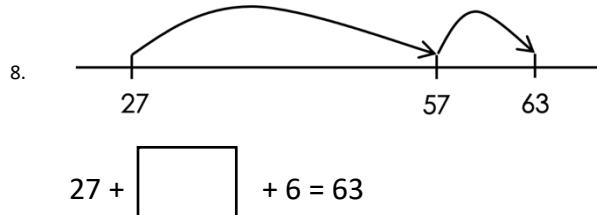
3.  $64 - 25 = \boxed{\quad}$



5.  $18 + \boxed{\quad} = 42$

6.  $73 - \boxed{\quad} = 58$

7.  $53 - 24 = 53 - \boxed{\quad} - 4$



10.  $86 - \boxed{\quad} = 86 - 20 - 9$

Maqhingha Ya Ku Tlula

### **Tinotsi ta Mudyondzisi**

Laha u nga endla tinotsi hi dyondzo na ku kombisa leswaku i vadyondzi vahi lava va ha lavaka ku pfuniwa hi maqhingha yo hambanahambana.

Nakambe u nga endla tinotsi ta timhaka tin'wana na tin'wana leti u lavaka ku ti langutisa eka xisungula dyondzo lexi landzelaka

### **Vhidiyo yo Seketela**

Maqhingha ya ku Tlula ya 8



<https://youtu.be/BHC9jDIUdRI>

## MAQHINGHA YA KU TLULA: XISUNGULA DYONDZO XA 8

### Xitoloveto xa Menthelo xa Minete yi1

- Ku tlula ku ya eka nomboro ya andziso wa khume leyi **rhangelaka**
- Ku susa tinomboro ta miandziso ya 10

### Nongonko wa Nghingiriko

Eka dyondzo leyi hi tirhisa maqhingha ya ku tlula ku ololoxa swiphiqo swa nomboro leyi kayivelaka.

Xiphiqo:  $84 - \square = 61$

Kombisa '84' eka ndzhati wa mintsengo.

Mudyondzisi: Hi fanele hi tlula ku ya endzhaku hi ya eka 61.

Kombisa '61' eka ndzhati wa mintsengo.

Mudyondzisi: Hi wihi ntlulo wa vukhume, naswona hi wihi ntlulo wa vun'we, leyi hi faneleke ku yi endla?

Vadyondzi: Susa 20 ku ya eka 64 u tlhela u susa 3 ku ya eka 61

Dirowa mintlulo leyi eka ndzhati wa mintsengo.

Vutisa: Xana hi tlule ku ya endzhaku kangani hinkwako?

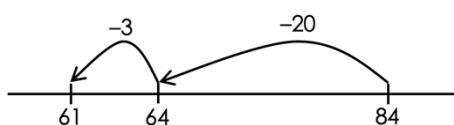
Mudyondzi: 23

Tsala nhlamulo eka buloko.

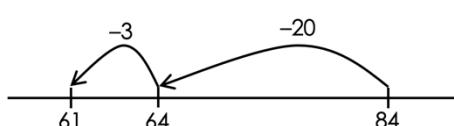
Mudyondzisi:  $84 - 20 - 3$  yi humesa nhlamulo yo fana na  $84 - 23 = 61$

Tsala xivulwa xa nomboro hi ku ya hilaha swi kombisiweke hakona.

$84 - \square = 61$



$84 - \boxed{23} = 61$



### Mgingiriko yo tirhiwa hi vadyondzi ha un'weun'we

Vadyondzi va fanele va ringeta swikombiso leswi landzelaka *hi ku tirhela emiehleketweni*:

$$75 - \square = 62 \quad 93 - \square = 69$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. "eka  $75 - \square = 62$ , ndzi susa 10 ku kuma 65, kutani ndzi susa 3 ku kuma 62, ntsengo hinkwawo wa mintlulo i 13."

Byela vadyondzi leswaku VA NGA hlayeli hi va1.

Loko vadyondzi van'wana vo heta mgingiriko leyi hi ku hatlisa swinene, va nyike swotala ku titoloveta hi swona:

$$75 - \square = 63 \quad 94 - \square = 69$$

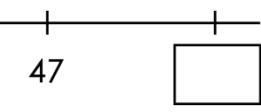
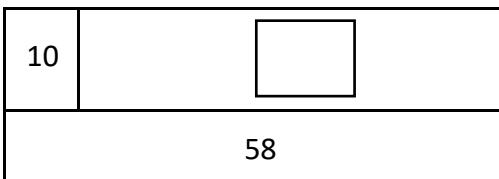
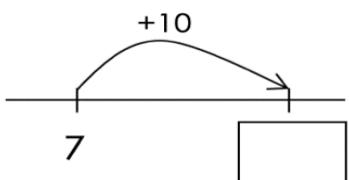
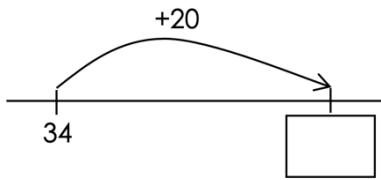
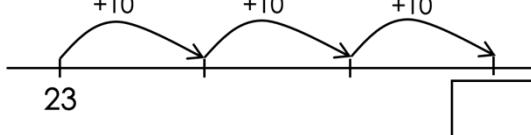
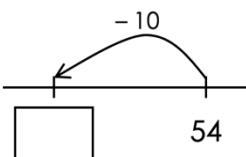
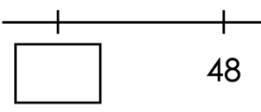
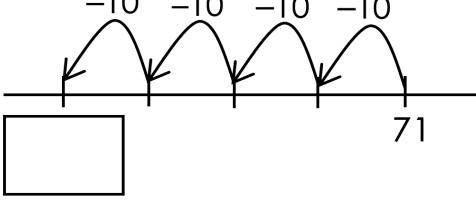
# Maqhingha Ya Ku Tlula

Vito:

## Maqhingha ya ku Tlula: Xikambelwana Emakumu ka Dyondzo

### XIYENGE XA 1

Timinete ti2 eka papila leri

|            |   |     |   |
|------------|---|-----|---|
| 1.         | Hetisa nomboro leyi kayivelaka.<br>12, 22, 32, 42, <input type="text"/>             | 11. | Hi yihi nomboro ya andziso wa 10 leyi landzelaka?<br>      |
| 2.         | Hetisa nomboro leyi kayivelaka.<br>79, 69, 59, 49, <input type="text"/>             |     |   |
| 3.         | $6 + 30 =$ <input type="text"/>   | 12. |   |
| 4.         | $57 - 10 =$ <input type="text"/>  |     |   |
| 5.         |    | 13. |   |
| 6.         |  | 14. | $16 + 30 =$ <input type="text"/>  |
| 7.         |  | 15. | Hi yihi nomboro ya andziso wa 10 leyi rhangelaka 48?<br> |
| 8.         | $37 +$ <input type="text"/> $= 40$  | 16. | $79 - 40 =$ <input type="text"/>  |
| 9.         |  | 17. | $38 -$ <input type="text"/> $= 18$  |
| 10.        | $31 - 20 =$ <input type="text"/>  | 18. | <input type="text"/> $- 20 = 64$  |
| Ntsengo 20 |   | 19. | $37 +$ <input type="text"/> $= 77$  |
| 20.        |   | 20. | <input type="text"/> $+ 20 = 66$  |

## Maqhingha Ya Ku Tlula

### Maqhingha ya ku Tlula: Xikambelwana Emakumu ka Dyondzo

XIYENGE XA 2

Timinete ti3 eka papila leri

|                                    |        |
|------------------------------------|--------|
| <br>1.                             | <br>2. |
| <br>3.                             |        |
| $45 + \boxed{\quad} + 7 = 82$      |        |
| <br>4.                             |        |
| $53 - \boxed{\quad} - 4 = 29$      |        |
| $57 + 26 = \boxed{\quad}$          |        |
| $83 - 24 = \boxed{\quad}$          |        |
| $19 + \boxed{\quad} = 41$          |        |
| $52 - \boxed{\quad} = 37$          |        |
| $61 - 32 = 61 - \boxed{\quad} - 2$ |        |
| $74 - \boxed{\quad} = 74 - 20 - 5$ |        |
| <b>Ntsengo 10</b>                  |        |

## **KU MBIRHIHATA NA KU HAFULA**

### **Manghenelo**

Nkongomiso eka swisungula dyondzo swinharhu leswi swo sungula wu le ka ku tsundzuka mimbirhihato ku ya fika eka mbirhihato wa 10 na tihafu ta tinomboro ta andziso wa 2 ku ya fika eka 20. Hi yelanisa ku tsundzuka loku na ririmini na swikombiso swa nkoka swa mimbirhihato/hafu. Eka swisungula dyondzo swa ntlhanu leswi landzelaka, nkongomiso wu le ka ku tirhisa swikombiso leswi tsundzukekaka leswaku va tirha mimbirhihato na tihafu ta tinomboro leti kulunyana emiehlekewni. Yin'wana ya migingiriko yi fanele ku rhangeriwa hi mudyondzisi exitsalelweni kasi yin'wana i ya leswaku vadyondzi va tiendlela va ri vox.

### **Vuswikoti byo Tsundzuka hi ku Hatlisa**

Ku na vuswikoti byo tsundzuka hi ku hatlisa byinharhu lebyi vadyondzi va faneleke ku dyondza eka ku mbirhihata na ku hafula:

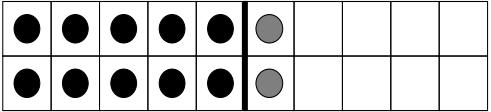
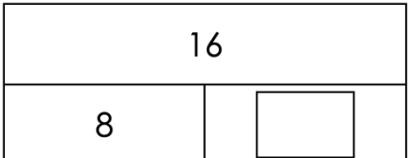
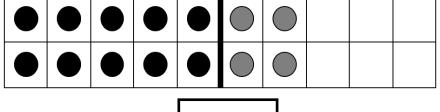
- mimbirhihato ku fika eka 10 (xik. mbirhihato wa 4 i 8 kumbe mbirhihato wa 7 i 14);
- tihafu ta tinomboro ta miandziso ya 2 ku fika eka 20 (xik. hafu ya 6 i 3 kumbe hafu ya 18 i 9);
- mimbirhihato na tihafu ta tinomboro ‘to tirheka’ (xik. mbirhihato wa 30 i 60 kumbe hafu ya 50 i 25 kumbe mbirhihato wa 200 i 400).

Vito:

**Ku Mbirhihata na Ku Hafula: Xikambelwana ku nga si sungula Dyondzo**

XIYENGE XA 1

Timinete ti2 eka papila leri

|  |  |
|--|--|
| <br>1. $6 + 6 = \boxed{\quad}$          | 11. $15 + 15 = \boxed{\quad}$                |
| 2. hafu ya 12 = <input type="text"/>   | 12. $7 \times 2 = \boxed{\quad}$             |
| 3. $9 + 9 = \boxed{\quad}$   | 13. hafu ya <input type="text"/> = 7         |
| 4. mbirhihato wa 8 = <input type="text"/>  | 14. mbirhihato wa 100 = <input type="text"/> |
| <input type="text"/> x 2 = 12  | 15. mbirhihato wa 20 = <input type="text"/>  |
|                                       | 16. hafu ya <input type="text"/> = 40        |
| 7. mbirhihato wa 10 = <input type="text"/>   | 17. hafu ya 50 = <input type="text"/>        |
| <br>hafu ya 14 = <input type="text"/> | 18. $16 \div 2 = \boxed{\quad}$              |
| 9. $10 \div 2 = \boxed{\quad}$   | 19. hafu ya = <input type="text"/>           |
| 10. hafu ya 18 = <input type="text"/>  | 20. $2 \times 60 = \boxed{\quad}$            |
| <b>Ntsengo 20</b>  |  |

**Ku Mbirihihata na Ku Hafula : Xikambelwana ku nga si sungula Dyondzo**

XIYENGE XA 2

Timinete ti3 eka papila leri

1. mbirihihato wa 42 =

2.  $36 \times 2 =$

3.  $64 \div 2 =$

4. hafu ya 102 =

5. mbirihihato wa 47 =

6. hafu ya 38 =

7. hafu ya  = 52

**mbirihihato wa 39 i 78**

8. hafu ya 78 i

9.  $39 + 38 =$

10. mbirihihato wa 39 =  $40 + 40 -$

**Ntsengo 10**

## KU MBIRHIHATA NA KU HAFULA: XISUNGULA DYONDZO XA 1

### Xitoloveto xa Menthele xa Minete yi1

‘Ndza komba, wena wa vula’ (tlilasi hinkwayo ku landzela nghingiriko wa vadyondzi vambirhi)

- a. Mudyondzisi u komba ‘mbirhihato ’wa nomboro hi ku tirhisa tintiho eka mavoko hamambirhi, xik.



Mbirhihato wa 3 i 6. Sweswi ndzi byele xivulwa xo komba mbirhihato loko mina ndzi ku komba tintiho

Mudyondzisi u komba: Mbirhihata 4      Mbirhihata 1      Mbirhihata 3      Mbirhihata 5  
Mbirhihata 2

Vadyondzi va vula xivulwa lexi faneleke, xik. “Mbirhihato wa 4 i 8”.

- b. Vadyondzi lava va tirhaka ha vambirhimbirhi va nga ndlandlamuxa nghingiriko lowu ku komba mbirhihato wa 6 – mbirhihato wa 10 hi ku tirhisa tintiho ta vona:

Mudyondzisi: Vadyondzi van’wana na van’wana vambirhi, ndzi kombeni mbirhihato wa 6.



Vadyondzi ha vambirhimbirhi:

Mudyondzisi: Xana ku na tintiho tingani hinkwato eka mbirhihato wa 6?

Kombela vadyondzi ku pananisa swandla swa vona va ri karhi va kombisa hi tintiho. Pfuneta vadyondzi ku lemuka leswaku nhlamulo i 12 naswona yi endliwile hi swandla swimbirhi leswi nga na titintiho ta 5 na swandla swimbirhi leswi nga na rintiho ri1 ha xin’wexin’we:  $5 + 5$  na  $1 + 1$ .

### Nongonoko wa Nghingiriko

Eka dyondzo leyi hi tirhisa ku mbirhihata na ku hafula ku ya fika eka to 20.

Xiphiko: mbirhihata 6

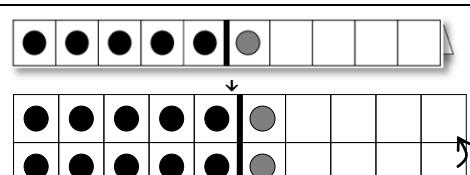
Komba tsevu wa tidoto eka yin’we ya tihofu ya khadi leri ta tidoto leti mbirhihatiweke. Pfula khadi.

Mudyondzisi: Swesi ndzi na tsevu yi mbirhihatiweke. Ku na tidoto tingani hinkwato?

Vadyondzi: 12

Mudyondzisi: Xana u swi tivisa ku yini leswaku 6 loko yi mbirhihatiweke i 12?

Yingisela vadyondzi lava va hlamuselaka leswaku khadi ra mbirhihato ri komba: ‘6 na 6’, ‘mintlawa mimbirhi ya 6’, ‘mbirhi yi andzisiwa hi 6’, ‘6 x 2’.

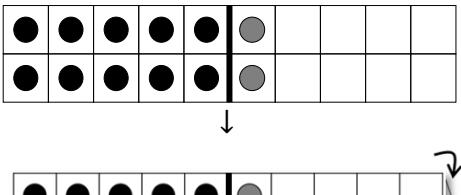
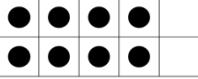
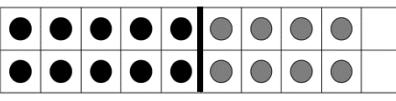
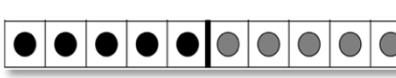


Mbirhihato wa 6 = 12

Mintlawa mimbirhi ya va tsevu i 12

6 yi andzisiwa hi mbirhi i 12

$$6 \times 2 = 12$$

|  |   |
|--|---|
| <p>Xiphiko: hafu ya 12</p> <p>Komba khumembirhi eka khadi ra tidoto ra mbirihihato.</p> <p>Petsa khadi hi le xikarhi ku ya hi leswi kombisiweke.</p> <p>Mudyondzisi: Sweswi ndzi vona hafu ya 12 wa tidoto na n'wina mi vona hafu. Kutani hi yihi hafu ya 12?</p> <p>Vadyondzi: 6</p> <p>Mudyondzisi: Xana u swi tivisa ku yini leswaku hafu ya 12 i 6?</p> <p>Yingisela vadyondzi lava va nyikaka tihlamuselo to fana na: 'hafu ya 12 i 6' kumbe 'khumembirhi loko yi avanyisiwa hi swiphemu swimbirhi i 6' kumbe 'khumembirhi loko yi aviwa hi ka mbirhi i tsevu' kumbe '<math>12 \div 2 = 6</math>'. Loko tinhlamulo to yelana na leti vuriweke ti nga humi, endla leswaku vadyondzi va landzelela swivulwa leswi endzhaku ka wena.</p> <p>Tsala tinhlamuselo leti to hambanahambana exitsalelweni.</p> |  <p>Hafu ya 12 i 6</p> <p>Khumembirhi yi avanyisiwa hi swiphemu swi2 swo ringana i 6.</p> <p>Khumembirhi loko yi aviwa hi ka 2 i 6.</p> <p><math>12 \div 2 = 6</math></p> <p>(swikombiso leswi swi fanele swi tshama exitsalelweni.)</p>                    |
| <p>Tlhela u dyondzisa: Mbirihihata makhadi ya tidoto 4 na 9</p> <p style="text-align: center;">Hafula makhadi ya tidoto 8 na 20</p> <p>Kombela tlilasi ku vula swivulwa swo hambanahambana ku pananisa rin'wana na rin'wana ra makhadi ya ku mbirihihata na ku hafula.</p> <p>Hloholotela vadyondzi ku vona vantlhanu (tidoto leto dzwihala) eka makhadi ya tidoto na ku ma tirhisa ku kuma nhlayo ya tidoto hi ku hatlisa. Kutani ku mbirihihata 9 hi nga vona va5 vambibi tanihi hi 10 na va4 vambirhi tanihi 8 kutani mbirihihato wa 9 i 18.</p>  |  <p>Mbirihihato wa 4 na hafu ya 8</p>  <p>Mbirihihato wa 9</p>  <p>Hafu ya 20</p> |

### Mgingiriko yo tirhiwa hi vadyondzi ha un'weun'we

Sweswi vadyondzi va fanele va ringeta nghingiriko wo tirhiwa hi vadyondzi ha un'weun'we lowu nyikiweke eka Xisungula Dyondzo xa1. Vadyondzi va fanele va hetisa na ku tsala swivulwa, ehansi ka xifaniso xin'wana na xin'wana xa makhadi ya tidoto eka papila ra ntirho.

### Vhidiyo yo Seketela

Ku Mbirihihata na ku Hafula 1



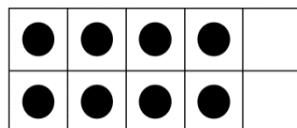
<https://youtu.be/UMmzMVM-SS0>

Vito:

**Ku Mbirhihata na ku Hafula Xisungula Dyondzo xa 1: Nggingiriko wo tirhiwa hi vadyondzi ha un'we-un'we**

Hetisa xivulwa kumbe tsala swivulwa swa xifaniso xin'wana na xin'wana.

1. Mbirhihata 4



Mbirhihato wa

i

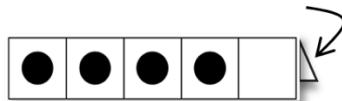
Mintlawa mimbirhi ya

i

loko yi andzisiwa hi mbirhi i

x 2 =

2. Hafu ya 8



Hafu ya

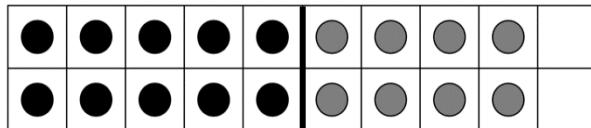
i

8 loko yi avanyisiwa hi 2 i

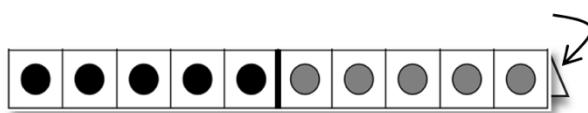
8 loko yi aviwa hi ka 2 i

÷ 2 =

3. Mbirhihata 9

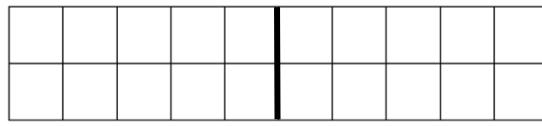


4. Hafu ya 20



5. Mbirhihata

Dirowa tidoto ta nomboro ya wena:



6. Hafu ya

Dirowa tidoto ta nomboro ya wena:



## KU MBIRHIHATA & KU HAFULA: XISUNGULA DYONDZO XA 2

### Xitoloveto xa Menthele xa Minete yi1

Pop-Fizz mimbirihihato na tihafu ku fika eka khume

- a. Mudyondzisi u vula a ku ‘pop’, vadyondzi va ku ‘fizz’; mudyondzisi u vula nomboro, vadyondzi va hlamula hi **mimbirihihato** (kumbe nomboro leyikulu hi andziso wa10):

|                  |   |  |
|------------------|---|--|
| Mudyondzisi: pop | → | Vadyondzi: fizz                        |
| Mudyondzisi: 1   | → | Vadyondzi: 2                           |
| Mudyondzisi: pop | → | Vadyondzi: fizz                        |
| Mudyondzisi: 5   | → | Vadyondzi: 10      hi ndlela yaleyo... |

Mimbirihihato ku fika eka 10: 1 – 2; 3 – 6; 5 – 10; 4 – 8; 2 – 4.

- b. Mudyondzisi u vula a ku ‘pop’, vadyondzi va ku ‘fizz’; mudyondzisi u vula nomboro, vadyondzi va hlamula hi **mimbirihihato** ((kumbe nomboro leyintsongo hi andziso wa10)):

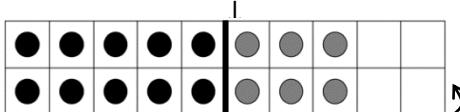
|                  |   |                                    |
|------------------|---|------------------------------------|
| Mudyondzisi: pop | → | Vadyondzi: fizz                    |
| Mudyondzisi: 8   | → | Vadyondzi: 4                       |
| Mudyondzisi: pop | → | Vadyondzi: fizz                    |
| Mudyondzisi: 6   | → | Vadyondzi: 3      hi ndlela yaleyo |

Tihafu ku fika eka 10: 10 – 5; 6 – 3; 4 – 2; 8 – 4; 2 – 1

### Nongonoko wa Nghingiriko

Eka dyondzo leyi hi titoloveta ku mbirihihata na ku hafula ku ya fika eka to 20.

*Tsundzuka: Makhadi ya tidoto ya mbirihihato ma kona ebukwini ya Print Master.*

|   |   |
|---|---|
| <p>Xiphigo: Lemuka vuxaka<br/>mbirihihato wa 8 = <input type="text"/>; hafu ya 16 = <input type="text"/><br/><br/>Tirhisra khadi ra tidoto ra mbirihihato wa 8. Petsa khadi ku komba ntlawa wun’we wa 8. Kutani u pfula ku komba mintlawa hamimbirhi ya 8.<br/><br/>Mudyondzisi: Xana hi wihi mbirihihato wa 8?<br/><br/>Vadyondzi: 16<br/><br/>Tsala ‘mbirihihato wa 8 = 16’ exitsalelwani<br/><br/>Mudyondzisi: Xana hi yihi hafu ya 16? (Petsa khadi loko u ri karhi u vula leswi ku komba leswi hafu yi kumekisaka xiswona hi ku endla mintlawa mimbirhi yo ringana.)<br/><br/>Vadyondzi: 8<br/><br/>Tsala ‘hafu ya 16 = 8’ ehansi ka xivulwa mbirihihato exitsalelwani.<br/><br/>Swikombiso leswi hinkwaswo swi fanele swi tshama exitsalelwani.</p> |  <p>8 wa tidoto</p>  <p>Mbirihihato wa 8 = 16</p>  <p>16 wa tidoto</p>  <p>hafu ya 16 = 8</p> |
|---|---|

### **Migingiriko yo tirhiwa hi vadyondzi ha un'weun'we**

Vekela makhadi ya tidito ya mbirihihato wa 5, mbirihihato wa 7 na mbirihihato wa makhadi ya tidoto exitsalelweni. Vadyondzi va fanele va tsala swivulwa swa tinomboro swa ku mbirihihata na ku hafula swa makhadi lama vekereweke.

Vadyondzi va fanele va hloholeteriwa ku hlamusela maehleketelelo ya vona.

Byela vadyondzi leswaku VA NGA hlayeli hi va1.

Loko vadyondzi van'wana vo heta migingiriko leyi hi ku hatlisa, va kombeli ku tsala swivulwa swa tinomboro swa man'wana makhadi ya tidoto.

### **Vhidiyo yo Seketela**

Ku Mbirihihata na ku Hafula 2



<https://youtu.be/8g1unCfK1Lo>

**Vhidiyo yo Seketela**

Ku Mbirhihata na ku Hafula 3



[https://youtu.be/L2\\_MyczJOyU](https://youtu.be/L2_MyczJOyU)

## KU MBIRHIHATA NA KU HAFULA: XISUNGULA DYONDZO XA 3

### Xitoloveto xa Menthela xa Minete yi1

Pop-Fizz mimbirhihato na tihafu ku fika eka makumembirhi

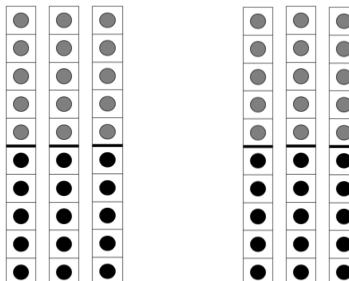
Mimbirhihato ku fika eka 20: 1 – 2; 3 – 6; 5 – 10; 4 – 8; 2 – 4; 6 – 12; 9 – 18; 7 – 14; 8 – 16; 10 – 20.

Tihafu ku fika eka 20: 10 – 5; 6 – 3; 4 – 2; 8 – 4; 2 – 1; 12 – 6; 18 – 9; 14 – 7; 16 – 8; 20 – 10.

### Nongonoko wa Nghingiriko

Eka dyondzo leyi hi titoloveta mimbirhihato ya tinomboro ta miandziso ya khume.

Lemuka: Mintila ya tidoto yi kona ebukwini ya Print Master.

|  |   |
|--|---|
| <p>Xiphiko: Lemuka vuxaka<br/>mbirhihato wa 3 = <input type="checkbox"/> ; mbirhihato wa 30 = <input type="checkbox"/><br/>Tirhisa tsevu wa mintila tidoto ta 10 kutani u ti xaxameta ku komba mbirhihato wa 30.<br/>Mudyondzisi: Ha swi tiva leswaku mbirhihato wa 3 = 6, hi wihi mbirhihato wa 30?<br/>Vadyondzi: 60<br/>Mudyondzisi: Mbirhihato wa 30 i 60, hi yihi hafu ya 60?<br/>Vadyondzi: 30<br/>Tsala swivulwa swa tinomboro hi ku ya hilaha swi kombisiweke hakona; u tlhela u va komba leswaku 6 na 60 ti na vuxaka ku fana na 3 na 30. Byela vadyondzi ku tsundzuka leswaku mimbirhihato na tihafu swi na vuxaka.<br/>Mudyondzisi: Hi nga tlhela hi tirhisa mintila ku va yi yimela 10 ematshan'weni yak u va hi komba tidoto ta khume nkarhi wun'wana na wun'wana.<br/>Kombisa vadyondzi exitsalelwani leswi vakhume va nga kombisiwaka xiswona hi ku tirhisa mintila yo leha leyi u yi dirowaka exitsalelwani.</p> | <p><b>Mbirhihato wa 3 = 6</b></p>  <p><b>Mbirhihato wa 30 = 60</b></p> <p><b>Hafu ya 60 = 30</b></p>  |
|--|---|

### Mgingiriko yo tirhiwa hi vadyondzi ha un'weun'we

Vadyondzi va fanele va ringeta swikombiso leswi landzelaka *hi ku tirhela emiehlekeweni*:

|               |               |               |
|---------------|---------------|---------------|
| Mbirhihata 2  | Mbirhihata 5  | Mbirhihata 7  |
| Mbirhihata 20 | Mbirhihata 50 | Mbirhihata 70 |

Byela vadyondzi leswaku VA NGA hlayeli hi va1. Va fanele va tirhisa qhingga leri va nga ha ku ri dyondza ku tsala mimbirhihato leyikulunyana hi ku hatlisa.

Loko vadyondzi van'wana vo heta mgingiriko leyi hi ku hatlisa, va nyike swotala leswaku va titoloveta hi swona:

|               |               |            |            |
|---------------|---------------|------------|------------|
| Mbirhihata 3  | Mbirhihata 8  | Hafu ya 4  | Hafu ya 8  |
| Mbirhihata 30 | Mbirhihata 80 | Hafu ya 40 | Half of 80 |

## KU MBIRHIHATA NA KU HAFULA: XISUNGULA DYONDZO XA 4

### Xitoloveto xa Menthele xa Minete yi1

Mimbirhihato na tihafu ta tinomboro to tirheka

Tinomboro to tirheka i tinomboro leti ti olovaka ku tirha hi tona. Hakanyingi i tinomboro ta andziso wa khume.

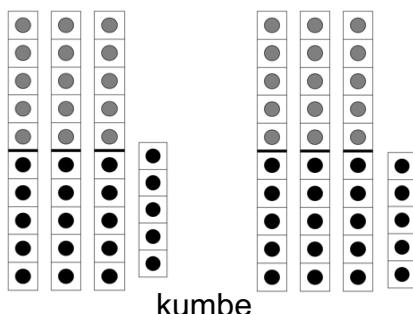
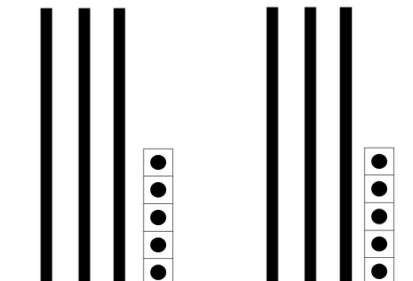
“Xana hi wihi/yihi...?”

|                               |   |  |
|-------------------------------|---|--|
| Mudyondzisi: mbirhihato wa 30 | → | Vadyondzi: 60                          |
| Mudyondzisi: mbirhihato wa 10 | → | Vadyondzi: 20                          |
| Mudyondzisi: mbirhihato wa 50 | → | Vadyondzi: 100                         |
| Mudyondzisi: hafu ya 40       | → | Vadyondzi: 20                          |
| Mudyondzisi: half of 50       | → | Vadyondzi: 25                          |
| Mudyondzisi: half of 100      | → | Vadyondzi: 50      hi ndlela yaleyo... |

### Nongonoko wa Ngħingiriko

Eka dyondzo leyi hi titoloveta mimbirhihato ya tinomboro ta tidijiti timbirhi.

Lemuka: Mintila ya tidoto yi kona ebukwini ya Print Master.

|  |  |
|--|--|
| <p>Xiphiqo: Mbirhihata 35</p> <p>Tirhisu tsevu wa mintila tidoto ta10, na mimbirhi ya tidoto ta 5, kutani u ti xaxameta ku komba mbirhihato wa 35.</p> <p>Mudyondzisi: Hi xihi xivulwa xa nomboro xa mbirhihato lexi kombisiweke eka dayagiramu?</p> <p>Tsundzuxa tħilası leswaku ntila wu1 (ku nga va tidoto kumbe ntila wunene) xin'wana na xin'wana xikomba khume.</p> <p>Vadyondzi: Mbirhihato wa 35 (kumbe 35 + 35)</p> <p>Mudyondzisi: Hi nga yi kumisa ku yini nhlamulo?</p> <p>Yingisela vadyondzi loko va vulavula hi ku veka vakhume swin'we ku kuma 6 wa vakhume kumbe 60 va tlħela va veka va 5vambirhi swin'we ku kuma 10.</p> <p>Tsala exitsalelweni maendlelo lawa ya ku ‘tlħantħla’ hi ku ya hi laha swi kombisiweke hakona la tlħelo.</p> | <p>Mbirhihato wa 35</p>  <p>kumbe</p>  <p>double 35</p> <pre> graph TD     30[30] --&gt; 60[60]     5[5] --&gt; 10[10]     60 --- 10     60 --- 70[double 35 = 70]   </pre> <p>double 35 = 70</p> |
|--|--|

|  |  |
|--|--|
| <p>Xiphiko: 29 x 2</p> <p>Dyondzisa nakambe maendlelo ya ku tlhantlha ku kuma mbirihihato wa 29 hi ku ya hilaha swi kombisiweke hakona. Tsundzuxa ttilasi leswaku ku andzisa hi 2 (kumbe x2) swa fana na ku mbirihihata.</p> <p>Pfumelela vadyondzi ku va va ku pfuna ku hetisa mimbirihihato ya vukhume na vun'we.</p> <p>Vadyondzi van'wana va nga vula leswaku <math>29 \times 2 = 60 - 2 = 58</math>. Maendlelo lama ya fanerile ku amukeriwa.</p> | <p>double 29</p> <p>double 29<br/>     29<br/>     20 ↓ 9<br/>     40 ↓ 18<br/>     double 29 = 58</p> |
|--|--|

### Mgingiriko yo tirhiwa hi vadyondzi ha un'weun'we

Vadyondzi va fanele va ringeta swikombiso leswi landzelaka:

Mbirihihata 41

Mbirihihata 36

Mbirihihata 47

Vadyondzi va fanele va tsala maendlelo ya ku tlhanthha va kuma mimbirihihato ya vukhume na vun'we hi ku tirhela emiehlekeweni. Mhaka ya nkoka i ku kota ku hlamlula swivutiso leswi hi ku tirhela emiehlekeweni.

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik.“mbirihihato wa 47 i mbirihihato wa 40 (ku nga 80) kutani ku va na mbirihihato wa 7 (ku nga 14). 80 na 14 i 80, 90, 94.”

Byela vadyondzi leswaku VA NGA hlayeli hi va1.

### Nghingiriko wo famba na wona ekaya: Phepha ro tirhela ra 1

Emakumu ka dyondzo ya namuntlha nyika vadyondzi Phepha ro tirhela ra 1. A wu fanelanga ku pimela vadyondzi nkarhi loko va ri karhi va tirha eka phepha leri.

Xikongomelo i ku nyika vadyondzi nkarhi leswaku va titoloveta hi mgingiriko yo tsala ya leswi va swi endleke emiehlekeweni.

### Vhidiyo yo Seketela

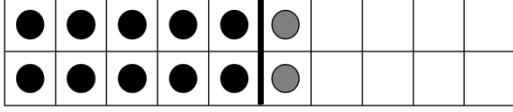
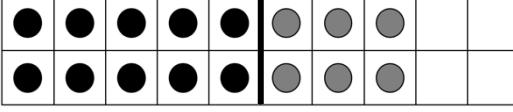
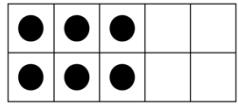
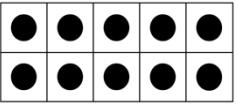
Ku Mbirihihata na ku Hafula 4



<https://youtu.be/qnSniN-bliU>

Vito:

**Ku Mbirihihata na Ku Hafula: Phepha Ro Tirhela Ra 1**

|   |   |  |   |                 |  |    |  |                 |   |
|---|---|--|---|-----------------|--|----|--|-----------------|---|
| <p>1.</p>  $6 + 6 = \boxed{\quad}$   | <p>11.</p>  $8 + 8 = \boxed{\quad}$                   |  |   |                 |  |    |  |                 |   |
| <p>2.</p> $\text{Hafu ya } 12 = \boxed{\quad}$  | <p>12.</p> $11 \times 2 = \boxed{\quad}$  |  |   |                 |  |    |  |                 |   |
| <p>3.</p> $9 + 9 = \boxed{\quad}$   | <p>13.</p> $\text{Half of } \boxed{\quad} = 8$  |  |   |                 |  |    |  |                 |   |
| <p>4.</p> $\text{Mbirihihato wa } 7 = \boxed{\quad}$  | <p>14.</p> $\text{Mbirihihato wa } 30 = \boxed{\quad}$  |  |   |                 |  |    |  |                 |   |
| <p>5.</p> $\boxed{\quad} \times 2 = 16$   | <p>15.</p> $\text{Mbirihihato wa } 50 = \boxed{\quad}$  |  |   |                 |  |    |  |                 |   |
| <p>6.</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td colspan="2" style="padding: 5px;">18</td> </tr> <tr> <td style="padding: 5px;">9</td> <td style="padding: 5px;"><math>\boxed{\quad}</math></td> </tr> </table> | 18  |  | 9 | $\boxed{\quad}$ | <p>16.</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td colspan="2" style="padding: 5px;">14</td> </tr> <tr> <td style="padding: 5px;"><math>\boxed{\quad}</math></td> <td style="padding: 5px;">7</td> </tr> </table> | 14 |  | $\boxed{\quad}$ | 7 |
| 18  |   |  |   |                 |  |    |  |                 |   |
| 9   | $\boxed{\quad}$   |  |   |                 |  |    |  |                 |   |
| 14  |   |  |   |                 |  |    |  |                 |   |
| $\boxed{\quad}$   | 7   |  |   |                 |  |    |  |                 |   |
| <p>7.</p> $\text{Mbirihihato wa } 10 = \boxed{\quad}$   | <p>17.</p> $\text{Hafu ya } 40 = \boxed{\quad}$   |  |   |                 |  |    |  |                 |   |
| <p>8.</p> <br>$\text{Hafu ya } 6 = \boxed{\quad}$  | <p>18.</p> <br>$\text{Hafu ya } 10 = \boxed{\quad}$ |  |   |                 |  |    |  |                 |   |
| <p>9.</p> $12 \div 2 = \boxed{\quad}$   | <p>19.</p> $\text{Hafu ya } 70 = \boxed{\quad}$   |  |   |                 |  |    |  |                 |   |
| <p>10.</p> $\text{Hafu ya } 14 = \boxed{\quad}$   | <p>20.</p> $2 \times 70 = \boxed{\quad}$  |  |   |                 |  |    |  |                 |   |

### **Tinotsi ta Mudyondzisi**

Laha u nga endla tinotsi hi dyondzo na ku kombisa leswaku i vadyondzi vahi lava va ha lavaka ku pfuniwa hi maqhingha yo hambanahambana.

Nakambe u nga endla tinotsi ta timhaka tin'wana na tin'wana leti u lavaka ku ti langutisa eka xisungula dyondzo lexi landzelaka

**Vhidiyo yo Seketela**

Ku Mbirihihata na ku Hafula 5



<https://youtu.be/t2jBnZHnn1Y>

**KU MBIRHIHATA NA KU HAFULA: XISUNGULA DYONDZO XA 5****Xitoloveto xa Menthele xa Minete yi1**

Mimbirhihato na tihafu ta tinomboro to tirheka

**Nongonoko wa Nggingiriko**

Eka dyondzo leyi hi titoloveta ku hafula tinomboro ta tidijiti timbirhi.

|  |  |
|--|--|
| <p>Xiphiko: <math>62 \div 2</math></p> <p>Tsundzuxa tlilasi leswaku ku avanyisa hi 2 (<math>\div 2</math>) swi fana na ku kuma hafu.</p> <p>Mudyondzisi: Hi nga yi kumisa ku yini hafu ya 6?</p> <p>Yingisela vadyondzi loko va vulavula hi ku hafula 60 ku kuma 30 na ku hafula 2 ku kuma 1, ku kuma nhlamulo ya 31.</p> <p>Tsala exitsalelweni maendlelo lawa ya ku ‘tlhantlhā’ hi ku ya hi laha swi kombisiweke hakona la tlhelo.</p> | <p>half of 62</p> <p>half of 62 = 31</p> |
| <p>Xiphiko: <math>76 \div 2</math></p> <p>Dyondzisa nakambe maendlelo ya ku tlhantlhā ku kuma hafu ya 76 hi ku ya hilaha swi kombisiweke hakona. Tsundzuxa tlilasi leswaku ku avanyisa hi 2 (kumbe <math>\div 2</math>) swa fana na ku hafula.</p> <p>Pfumelela vadyondzi ku va va ku pfuna ku hetisa tihafu ta vukhume na vun’we.</p>   | <p>half of 76</p> <p>half of 76 = 38</p> |

**Miggingiriko yo tirhiwa hi vadyondzi ha un’weun’we**

Vadyondzi va fanele va ringeta swikombiso leswi landzelaka:

hafu ya 42

$68 \div 2$

$34 \div 2$

Vadyondzi va fanele va tsala maendlelo ya ku tlhantlhā va kuma tihafu ta vukhume na vun’we hi ku tirhela emiehlekeweni.

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. “ $34 \div 2$  i hafu ya 30 (leyi ku nga 15) na hafu ya 4 (leyi ku nga 2). 15 na 2 i 17.”

Byela vadyondzi leswaku VA NGA hlayeli hi va1.

**Vhidiyo yo Seketela**

Ku Mbirhihata na ku Hafula 6



<https://youtu.be/fxDY11LICsc>

## KU MBIRHIHATA NA KU HAFULA: XISUNGULA DYONDZO XA 6

### Xitoloveto xa Menthele xa Minete yi1

Swi vule hi ndlela yin'wana:

Tirhisa makombiselo yo hambanahambana ya ku mbirhihata na ku hafula. Leswi swi nga katsa marito yo fana na 'mbirhihata 7' na 'hafu ya 16', kumbe maendlelo man'wana yo fana na 'mintlawa mimbirhi ya va7' kumbe '7 na 7' kumbe '7 + 7' kumbe '16 ÷ 2' kumbe 'khumetsevu yi aviwa hi ka mbirhi'.

Leswi swi nga katsa ku endla xifaniso xo fana na lexi nga laha hansi:

|    |   |
|----|---|
| 9  | 9 |
| 18 |   |

Vadyondzi va fanele va ta na tindlela ta ku vula kumbe ku tsala 'mbirhihato wa 9 = 18' xik.  $9 + 9 = 18$     $18 - 9 = 9$    vakaye vambirhi va endla  $18 \div 9 = 2$

### Nongonoko wa Nghingiriko

Eka dyondzo leyi hi tirhisa mimbirhihato na tihafu hi tindlela to tala.

|   |  |
|---|--|
| <p>Xiphigo: Mbirhihato 26</p> <p>Vutisa vadyondzi hi tindlela to hambanahambana ta ku vula leswi va swi vonaka eka dayagiramu leyi.</p> <p>Xikombiso, ku mbirhihata 26 swi fana na <math>26 \times 2</math> kumbe 'mintlawa mimbirhi ya va26'. Xikombiso xin'wana hi leswaku ku mbirhihata 26 i yikulu hi ka2 eka mbirhihato wa 25 hikuva wun'wana na wun'wana wa mintlawa i wukulu hi 1.</p> <p>Engetela yin'wana miehleketo leyintshwa ku suka eka vadyondzi ku ya eka dayagiramu.</p> <p>Vadyondzi van'wana va nga ta na nkhakhuleto wo susa <math>52 - 26 = 26</math>. Tsala leswi eka dayagiramu loko swi vuriwa. Ku Katsa ku hlanganisa na ku susa swi dyondzisiwa tanahi qhingga eku heteleleni ka swisungula dyondzo.</p> | <p>26 and 26 is □</p> <p><math>52 \div 2 = \square</math></p> <p>half of 52 = □</p> <p><math>26 + 26 = \square</math></p> <p><math>26 \times \square = 52</math></p> |
|---|--|

### Mgingiriko yo tirhiwa hi vadyondzi ha un'weun'we

Sweswi vadyondzi va fanele va dirowa nhlengelo wa swivulwa, ku fana na leswi swi endliweke laha henbla, ku suka eka:

$$\text{Mbirhihato wa } 43 = 86$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. "ndza swi tiva leswaku 43 na 43 i 86" kumbe "mbirhihato wa 43 = 86, kutani ndza swi tiva leswaku mbirhihato wa 430 = 860"

Loko vadyondzi van'wana va heta nghingiriko lowu hi ku hatlisa, va kombele ku tumbuluxa wun'wana nhlengelo wa swivulwa leswi nga na vuxaka va sungula hi xivulwa xin'wana na xin'wana xa ku mbirhihata kumbe ku hafula lexi va xi hlawulaka.

**KU MBIRHIHATA NA KU HAFULA: XISUNGULA DYONDZO XA 7****Xitoloveto xa Menthele xa Minete yi1**

Mimbirhihato na tihafu ta tinomboro ta miandziso ya 10, 100, 1000

“Xana hi wihi/yihi...?”

- Mudyondzisi: mbirhihato wa 10 → Vadyondzi: 20
- Mudyondzisi: mbirhihato wa 100 → Vadyondzi: 200
- Mudyondzisi: mbirhihato wa 1000 → Vadyondzi: 2000
- Mudyondzisi: hafu ya o 40 → Vadyondzi: 20
- Mudyondzisi: hafu ya 400 → Vadyondzi: 200
- Mudyondzisi: hafu ya 4000 → Vadyondzi: 2000      hi ndlela yaleyo...

**Nongonoko wa Nghingiriko**

Eka dyondzo leyi hi titoloveta hi mimbirhihato na tihafu ta tinimboro ta andziso wa 10.

|  |   |
|--|---|
| <p>Xiphiko: mbirhihata 34 → mbirhihata 340 → mbirhihata 3400</p> <p>Mudyondzisi: Hi nga wu kumisa ku yini mbirhihato wa 34?</p> <p>Yingisela vadyondzi loko va vulavula hi ku mbirhihata 30 ku kuma 60 na ku mbirhihata 4 ku kuma 8, ku kuma nhlamulo ya 68.</p> <p>Loko vadyondzi va tikeriwa ku khakhuleta leswi emiehlekeweni, tsala maendlelo lama ya ku ‘tlhantlha’ hi ku ya hilaha swi kombisiweke ha kona.</p> <p>Mudyondzisi: Hi nga tirhisa leswi hi swi tivaka mayelana na ku mbirhihata 34 ku kuma mbirhihato wa 340?</p> <p>Yingisela vadyondzi lava va nga ta vula leswaku 340 i yikulu hi ka 10 eka 34 kutani mbirhihato wa 340 i wukulu hi ka khume eka 68; leyi nga 680.</p> | <p>double 34</p> <p>double 34 = 68</p> <p>mbirhihato wa 34 = 68</p> <p>mbirhihato wa 340 = <input type="text"/></p> |
| <p>Xiphiko: hafu ya 46 → hafu ya 460</p> <p>Mudyondzisi: Hi nga yi kumisa ku yini hafu ya 46?</p> <p>Yingisela vadyondzi lava va nga ta vulavula hi ku hafula 40 ku kuma 20 na ku hafula 6 ku kuma 3, le nga 23.</p> <p>Loko vadyondzi va tikeriwa ku khakhuleta leswi emiehlekeweni, tsala maendlelo lama ya ku ‘tlhantlha’ hi ku ya hilaha swi kombisiweke ha kona.</p> <p>Mudyondzisi: Hi nga tirhisa leswi hi swi tivaka mayelana na ku hafula 46 ku kuma hafu ya 460?</p>   | <p>half of 46</p> <p>half of 46 = 23</p> <p>hafu ya 46 = 23</p> <p>hafu ya 460 = <input type="text"/></p>           |

|   |  |
|---|--|
| Yingisela vadyondzi lava va nga ta vula leswaku 460 i yikulu hi ka 10 eka 46 kutani hafu ya 460 i yikulu hi ka 10 eka 23 = 230. |  |
|---|--|

### **Migingiriko yo tirhiwa hi vadyondzi ha un'weun'we**

Sweswi vadyondzi va fanele va dirowa nhlengelo wa swivulwa, ku fana na leswi swi endliweke laha henhla, ku suka eka:

mbirihihato wa 45    mbirihihato wa 27    hafu ya 82    hafu ya 76

mbirihihato wa 450    mbirihihato wa 270    hafu ya 820    hafu ya 760

Hloholotela vadyondzi ku sungula va khakhuleta mbirihihato/hafu emiehlekeweni loko ku ri leswaku va nga swi kota naswona va tirhisa patironi ku hlamula mimbirihihato/hafu letswe landzelaka hi ku hatlisa.

### **Nghingiriko wo famba na wona ekaya: Phepha ro tirhela ra 2**

Emakumu ka dyondzo ya namuntlha nyika vadyondzi Phepha ro tirhela ra 2. A wu fanelanga ku pimela vadyondzi nkarhi loko va ri karhi va tirha eka phepha leri.

Xikongomelo i ku nyika vadyondzi nkarhi lesawku va titoloveta hi migingiriko yo tsala ya leswi va swi endleke emiehlekeweni.

### **Vhidiyo yo Seketela**

Ku Mbirihihata na ku Hafula 7



<https://youtu.be/JJUPpmMdaAw>

Vito:

**Ku Mbirihihata na Ku Hafula: Phepha Ro Tirhela Ra 2**

|   |  |
|---|--|
| 1. Mbirihihato wa 32 i <input type="text"/>   | 11. Mbirihihato wa 44 i <input type="text"/> |
| 2. $26 \times 2 =$ <input type="text"/>   | 12. $38 \times 2 =$ <input type="text"/>     |
| 3. $42 \div 2 =$ <input type="text"/>   | 13. $86 \div 2 =$ <input type="text"/>       |
| 4. Hafu ya 110 = <input type="text"/>   | 14. Hafu ya 104 = <input type="text"/>       |
| 5. Mbirihihato wa 23 = <input type="text"/>   | 15. Mbirihihato wa 39 = <input type="text"/> |
| 6. Hafu ya 36 = <input type="text"/>  | 16. Hafu ya 48 = <input type="text"/>        |
| <b>Mbirihihato wa 31 is 62</b><br><br>7. $2 \times 31 =$ <input type="text"/><br><br>8. Hafu ya 62 i <input type="text"/><br><br>9. $31 + 32 =$ <input type="text"/><br><br>10. Mbirihihato wa 31 = $30 + 30 +$ <input type="text"/>    |  |
| <b>Mbirihihato wa 49 is 98</b><br><br>17. $2 \times 49 =$ <input type="text"/><br><br>18. Hafu ya 98 i <input type="text"/><br><br>19. $49 + 48 =$ <input type="text"/><br><br>20. Mbirihihato wa 49 = $50 + 50 -$ <input type="text"/> |  |

### **Tinotsi ta Mudyondzisi**

Laha u nga endla tinotsi hi dyondzo na ku kombisa leswaku i vadyondzi vahi lava va ha lavaka ku pfuniwa hi maqhingha yo hambanahambana.

Nakambe u nga endla tinotsi ta timhaka tin'wana na tin'wana leti u lavaka ku ti langutisa eka xisungula dyondzo lexi landzelaka

**Vhidiyo yo Seketela**

Ku Mbirhihata na ku Hafula 8



[https://youtu.be/\\_qp\\_sjlzqLw](https://youtu.be/_qp_sjlzqLw)

## KU MBIRHIHATA NA KU HAFULA: XISUNGULA DYONDZO XA 8

### Xitoloveto xa Menthele xa Minete yi1

Mimbirhihato na tihafu ta tinomboro to tirheka

### Nongonoko wa Ngchingiriko

Eka dyondzo leyi hi aka vuxaka eka swivulwa eka swa mbirhihato kumbe swa ku hafula eka tinomboro leti nyikiweke, ku katsa na mimbirhihato ya le kusuhi.

|   |  |
|---|--|
| <p>Xiphiko: mbirhihata 17</p> <p>Kombela vadyondzi ku kuma tindlela to hambanahambana ta ku vula leswi va swi vonaka eka dayagiramu leyi.</p> <p>Xikombiso, <math>17 + 18 = \square</math> yi fanele yi va yi ri yikulu hi 1 eka <math>17 + 17 = \square</math>. Xikombiso xin'wana hi leswaku mbirhihato wa 17 i wukulu hi 2 eka mbirhihato wa 16 hikuva eka ntlawa wun'wana na wun'wana ku engeteriwa hi1.</p> <p>Engetela miehleketo yin'wana leyintshwa yo huma eka vadyondzi eka dayagiramu.</p> <p>Vadyondzi van'wana va nga vula nkhakhuleto wa ku susa <math>34 - 17 = \square</math>. Loko va vula swin'wana, swi tsale eka dayagiramu. Ku Katsa ku hlanganisa na ku susa swi dyondzisiwa tanahi qhingha eku heteleni ka swisungula dyondzo.</p> | <p>double 17 = double 16 + <math>\square</math></p> <p>double 170 = <math>\square</math>      half of 34 = <math>\square</math></p> <p style="text-align: center;"><math>\text{double } 17 = 34</math></p> <p><math>17 + 18 = \square</math>      <math>17 + 16 = \square</math></p> |
|---|--|

### Micingiriko yo tirhiwa hi vadyondzi ha un'weun'we

1. Sweswi vadyondzi va fanele va dirowa nhlengelo wa swivulwa, ku fana na leswi swi endliweke laha henhla, ku suka eka:

$$\text{Mbirhihato wa } 38 = 76$$

Xikombiso, '38 + 38 = 76' kumbe 'hafu ya 760 = 380' kumbe 'hafu ya hafu ya 76 = 19'

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. "kotara ya 76 i 19 hikuva ndzi hafurile ndzi tlhela ndzi hafula nakambe".

Byela vadyondzi leswaku VA NGA hlayeli hi va1.

2. Vadyondzi va fanele va ringeta ku hlamula swivutiso leswi:

$$\text{Hi wihi mbirhihato wa } 99?$$

$$\text{Hetisa xivulwa lexi: Mbirhihato wa } 99 = \text{mbirhihato wa } 100 - \square$$

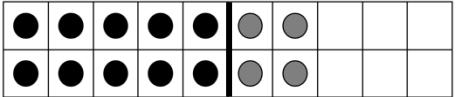
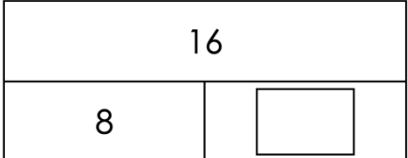
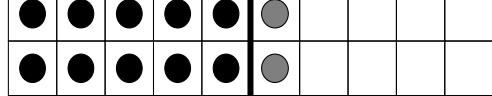
$$\text{Hi wihi mbirhihato wa } 49?$$

Loko vadyondzi van'wana va heta ntirho lowu hi ku hatlisa, va kombele ku tumbuluxa wun'wana nhlengelo wa swivulwa leswi nga na vuxaka va sungula hi xivulwa xin'wana na xin'wana xa ku mbirhihata kumbe ku hafula lexi va xi hlawulaka.

Vito:

**Ku Mbirihihata na Ku Hafula: Xikambelwana Emakumu ka Dyondzo****XIYENGE XA 1**

Timinete ti2 eka papila leri

|   |   |
|---|---|
| <br>1. $7 + 7 =$ <input type="text"/>      | 11. $14 + 14 =$ <input type="text"/>          |
| 2. hafu ya 14 = <input type="text"/>  | 12. $7 \times 2 =$ <input type="text"/>       |
| 3. $9 + 9 =$ <input type="text"/>   | 13. hafu ya <input type="text"/> = 7          |
| 4. mbirihihato wa 8 = <input type="text"/>  | 14. mbirihihato wa 100 = <input type="text"/> |
| 5. <input type="text"/> $\times 2 = 14$   | 15. mbirihihato wa 20 = <input type="text"/>  |
|    | 16. hafu ya <input type="text"/> = 40         |
| 7. mbirihihato wa 10 = <input type="text"/>   | 17. hafu ya 50 = <input type="text"/>         |
| <br>8. hafu ya 12 = <input type="text"/> | 18. $18 \div 2 =$ <input type="text"/>        |
| 9. $10 \div 2 =$ <input type="text"/>   | 19. hafu ya 30 = <input type="text"/>         |
| 10. hafu ya 18 = <input type="text"/>   | 20. $2 \times 60 =$ <input type="text"/>      |
| <b>Ntsengo 20</b>   |   |

**Ku Mbirihihata na Ku Hafula : Xikambelwana****Emakumu ka Dyondzo**

XIYENGE XA 2

Timinete ti3 eka papila leri

1. mbirihihato wa 42 =

2.  $36 \times 2 =$

3.  $64 \div 2 =$

4. hafu ya 102 =

5. mbirihihato wa 99 =

6. hafu ya 38 =

7. hafu ya  = 52

**mbirihihato wa 39 i 78**

8. hafu ya 78 i

9.  $39 + 38 =$

10. mbirihihato wa 39 =  $40 + 40 -$

**Ntsengo 10**

## KU KATSAKANYA NA KU LULAMISA

### Manghenelo

Nkongomiso eka swisungula dyondzo swinharhu leswi swo sungula wu le ka ku hlanganisa hi ku tirhisa ku katsakanya ku ya eka nomboro yo tirheka na ku lulamisa. Eka swisungula dyondzo swinharhu leswi landzelaka, nkongomiso wu le ka ku susa hi ku tirhisa ku katsakanya na ku lulamisa. Swisungula dyondzo swimbirhi leswo hetelela swi kongomisiwe eka minkhakhuleto laha tinomboro to tlula yin'we ti nga katsakanyiwaka ku ya eka nomboro yo tirheka. Tinomboro to tirheka i tinomboro leti swi olovaka swinene ku tirha hi tona. Hakanyingi leti i tinomboro ta andziso wa khume. Yin'wana ya mintirho yi fanele ku rhangeriwa hi mudyondzisi exitsalelwani kasi yin'wana i ya leswaku vadyondzi va tiendlela va ri vox.

### Vuswikoti byo Tsundzuka hi ku Hatlisa

Ku na vuswikoti byo tsundzuka hi ku hatlisa bya tsevu lebyi vadyondzi va faneleke ku dyondza eka qhingga ra ku katsakanya na ku lulamisa:

- ku hlayela emahlweni kumbe endzhaku hi va10 ku suka eka nomboro yin'wana na yin'wana (xik. 12, 22, 32, kumbe 57, 47, 37, ...)
- ku hlanganisa kumbe ku susa 1, 2 na 3 ku suka eka nomboro yin'wana na yin'wana ku ri na/ku nga ri na ku tlula ku ya eka khume (xik.  $49 + 1 = 50$  kumbe  $30 - 2 = 28$ ;  $49 + 2 = 51$  kumbe  $52 - 3 = 49$ ).
- ku hlanganisa nomboro ya andziso wa khume eka nomboro yin'wana na yin'wana (xik.  $61 + 20 = 81$ )
- ku susa nomboro ya andziso wa khume eka nomboro yin'wana na yin'wana (xik.  $46 - 30 = 16$ )
- ku lemuka nomboro ya andziso wa khume leyi nga kusuhi ngopfu (xik. 47 yi le kusuhi ngopfu na 50; 39 yi le kusuhi ngopfu na 40)
- ku lemuka leswi u nga yisaka swona eka nomboro ya andziso wa 10 leyi nga kusuhi swinene (xik. 43 yi hundze eka 40 hi 3 ;eka 19 ku laveka 1 leswaku yi va 20).

Vito:

**Ku Katsakanya na Ku Lulamisa: Xikambelwana ku nga si sungula Dyondzo****XIYENGE XA 1**

Timinete ti2 eka papila leri

|                                      |  |
|--------------------------------------|--|
| 1. $23 + 30 =$ <input type="text"/>  | 11. $69 + 2 =$ <input type="text"/>        |
| 2. $42 - 3 =$ <input type="text"/>   | 12. $68 + 10 =$ <input type="text"/>       |
| 3. $57 - 10 =$ <input type="text"/>  | 13. $38 + 3 =$ <input type="text"/>        |
| 4. $51 - 2 =$ <input type="text"/>   | 14. $145 + 30 =$ <input type="text"/>      |
| 5. $137 - 20 =$ <input type="text"/> | 15. $97 - 60 =$ <input type="text"/>       |
| 6. $43 + 40 =$ <input type="text"/>  | 16. $48 =$ <input type="text"/> - 2        |
| 7. $29 =$ <input type="text"/> - 1   | 17. $49 +$ <input type="text"/> = 50       |
| 8. $67 +$ <input type="text"/> = 70  | 18. mbirihato wa 50 = <input type="text"/> |
| 9. $97 = 100 -$ <input type="text"/> | 19. mbirhiwato 100 = <input type="text"/>  |
| 10. $88 +$ <input type="text"/> = 90 | 20. $28 +$ <input type="text"/> = 30       |
| <b>Ntsengo 20</b>                    |  |

**Ku Katsakanya na Ku Lulamisa: Xikambelwana ku nga si sungula Dyondzo**

XIYENGE XA 2

Timinete ti3 eka papila leri

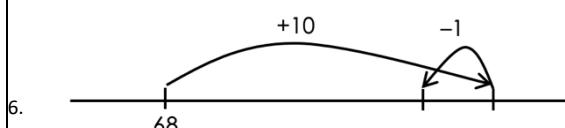
1.  $34 + 29 =$

2.  $64 - 19 =$

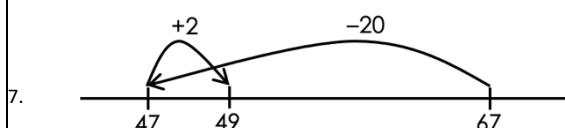
3.  $27 + 98 =$

4.  $234 - 99 =$

5.  $97 + 98 + 99 =$



$68 + \boxed{\phantom{0}} = 68 + 10 - 1$



$67 - 18 = 67 - 20 + \boxed{\phantom{0}}$

8.  $56 + 28 = 56 + \boxed{\phantom{0}} - 2$

9.  $84 - 39 = 84 - \boxed{\phantom{0}} + 1$

10. Tsondzela xivulwa xa nomboro lexi nkyikaka nhlamulo yo fana na:

$80 - 59$

$80 + 60 - 1$

$80 - 60 - 1$

$80 - 60 + 1$

$80 + 60 + 1$

**Ntsengo 10**

**KU KATSAKANYA NA KU LULAMISA: XISUNGULA DYONDZO XA 1****Xitoloveto xa Menthele xa Minete yi1**

a. Xintlangwana xa ku rhendzeleka hi tlilasi ka 10 ku tlula nomboro leyi a yi vuriwile

Mudyondzisi u vula nomboro kutani vadyondzi va hlamula hi ku vula nomboro leyi hundzaka leyi ayi vuriwile hi 10.

Mudyondzisi: 16

Mudyondzi 1: 26 → Mudyondzi 2: 36 → Mudyondzi 3: 46 → Mudyondzi 4: 56 hi ndlela yaleyo.

b. Hlanganisa nomboro ya andziso wa 10

“Hi yihi...?”

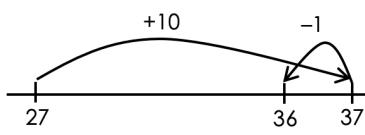
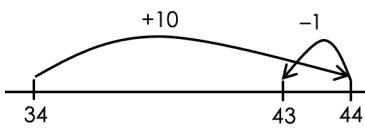
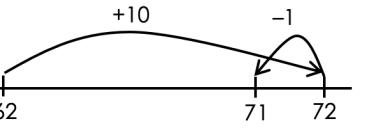
Mudyondzisi:  $43 + 20 \rightarrow$  Vadyondzi: 63

Mudyondzisi:  $35 + 20 \rightarrow$  Vadyondzi: 55

Mudyondzisi:  $42 + 30 \rightarrow$  Vadyondzi: 72      hi ndela yaleyo ...

**Nongonoko wa Nghingiriko**

Eka dyondzo leyi hi dyondzisa ro sungula qhingga ra ku katsakanya na ku lulamisa.

|  |  |
|--|--|
| <p>Kombela vadyondzi ku nyika tinhlamulo eka minkakhuleto leyi nga exitsalelweni (leyi nga tsariwa exineneni) kutani u kombela vadyondzi ku vula leswi va swi lemukaka.</p> <p>Mudyondzisi: Hi swihi leswi u swi lemukaka?</p> <p>Vadyondzi: Ku hlanganisa 9 swi nyika nhlamulo yo fana na loko hi hlanganisa 10 kutani hi susa 1.</p>   | <p>Tsala exitsalelweni:</p> $27 + 9 =$ $27 + 10 =$<br>$34 + 9 =$ $34 + 10 =$<br>$62 + 9 =$ $62 + 10 =$   |
| <p>Mudyondzisi: Tinomboro to tirheka i ti nomboro leti olovaka ku tirha hi tona. Khume i nomboro yo tirheka. La ka qhingga leri, loko hi hlanganisa 9, hi <b>katsakanya</b> nomboro 9 ku ya eka 10. Hi endla leswi hikuva yi le kusuhi na 10 naswona 10 i nomboro yo tirheka eka ku hlanganisa.</p> <p>Kutani hi hlanganisa 10 kutani hi <b>lulamisa</b> nhlamulo ya hina hi ku teka 1 leyi a hi yi engeterile loko hi katsakanya.</p> | $27 + 9$<br><br>$34 + 9$<br><br>$62 + 9$<br> |
| <p>Komba <math>27 + 9</math>; <math>34 + 9</math> na <math>62 + 9</math> hi ku tirhisa minzhati ya mintsengo exitsalelweni.</p> <p>Mudyondzisi: Qhingga leri hi ri vitana Ku <b>Katsakanya na ku Lulamisa</b>.</p> <p>Kombela vadyondzi ku hlayela ehenhla marito ku katsakanya na ku lulamisa u tlhela u kombetela eka marito exitsalelweni loko va ri karhi va ma hlaya.</p>   | <p>Tsala exitsalelweni:</p> <p>Ku Katsakanya na ku Lulamisa</p>  |

**Migingiriko yo tirhiwa hi vadyondzi ha un'weun'we**

Sweswi vadyondzi va fanele va ringeta swikombiso leswi landzelaka *emiehlekeweni*:

$$33 + 9 \quad 48 + 9 \quad 76 + 9 \quad 84 + 9$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik“eka 33 + 9, ndzi katsakanyile 9 ku ya eka 10 kutani ndzi hlanganisa 10 eka 33 ku kuma 43; kutani ndzi lulamisa nhlamulo hi ku susa 1, nhlamulo i 42.” Loko u ri karhi u hlamusela maendlelo ya vadyondzi nakambe, tshikelela laha va katsakanyeke na laha va lulamiseke.

**Vhidiyo yo Seketela**

Ku Katsakanya na ku Lulamisa 1



<https://youtu.be/jpwwvujejpl>

## KU KATSAKANYA & KU LULAMISA: XISUNGULA DYONDZO XA 2

### Xitoloveto xa Menthele xa Minete yi1

a. Pop-Fizz: Nomboro ya andziso wa10 leyi nga ekusuhi swinene

Mudyondzisi u vula a ku: ‘pop’ kutani vadyondzi va ku ‘fizz’; kutani mudyondzisi a vula nomboro, endzhaku vadyondzi va hlamula hi ku vula nomboro yin’wana.

Eka dyondzo leyi, vadyondzi va fanele hlamula hi ku vula nomboro ya andziso wa khume leyi nga ekusuhi swinene.

|                  |   |  |
|------------------|---|--|
| Mudyondzisi: pop | → | Vadyondzi: fizz                        |
| Mudyondzisi: 18  | → | Vadyondzi: 20                          |
| Mudyondzisi: pop | → | Vadyondzi: fizz                        |
| Mudyondzisi: 37  | → | Vadyondzi: 40                          |
| Mudyondzisi: pop | → | Vadyondzi: fizz                        |
| Mudyondzisi: 42  | → | Vadyondzi: 40                          |
| Mudyondzisi: pop | → | Vadyondzi: fizz                        |
| Mudyondzisi: 33  | → | Vadyondzi: 30      hi ndlela yaleyo... |

b. Pop-Fizz: Xana hi nga tlurisa ku yini ku ya eka nomboro ya andziso wa 10 ya le kusuhi?

Sweswi vadyondzi va vula leswi swi faneleka swi humeleta ku va hi ya eka nomboro ya andziso wa khume ya le kusuhi swinene

|                 |   |  |
|-----------------|---|--|
| Mudyondzisi: 7  | → | Vadyondzi: +3                          |
| Mudyondzisi: 28 | → | Vadyondzi: +2                          |
| Mudyondzisi: 19 | → | Vadyondzi: +1                          |
| Mudyondzisi: 43 | → | Vadyondzi: -3                          |
| Mudyondzisi: 32 | → | Vadyondzi: -2                          |
| Mudyondzisi: 11 | → | Vadyondzi: -1      hi ndlela yaleyo... |

### Nongonoko wa Nghingiriko

Eka dyondzo leyi hi dyondzisa ro sungula qhingga ra ku katsakanya na ku lulamisa eka ku hlanganisa.

|   |  |
|---|--|
| <p>Kombela vadyondzi ku vula leswi va swi tsundzukaka hi maqhingga ya ku tlula.</p> <p>Mudyondzisi: Loko hi tirhisa qhingga ra ku tlula, xana a hi khakhuletisa ku yini <math>47 + 29</math>?</p> <p>Pfumelela vadyondzi ku hlamusela maendlelo u tlhela u kombela leswaku mudyondzi wo karhi ku swi kombisa exitsalelweni. Tsundzuxa vadyondzi hi maendlelo: <b>kombisa, tlhantlha, ku tlula na ku hlamula.</b></p> <p>Vadyondzi: Hlanganisa 20 eka 47 ku kuma 67, kutani u hlanganisa 3 ku va u ya fika eka 70, eku heteleleni u hlanganisa 6 (<math>3 + 6 = 9</math>).</p> | <p>Ntirho wo hetelela wa le xitsalelweni wu kombisiwile laha hansi:</p> $47 + 29 = 76$ |
|---|--|

|  |   |
|--|---|
| <p>Mudyondzisi: Hi yihi nomboro yo tirheka leyi 29 yi nga ekusuhi na yona?</p> <p>Vadyondzi: 30</p> <p>Mudyondzisi: Loko hi katsakanya 29 ku ya eka 30 kutani hi tlula 30 ku ya emahlweni ku suka eka 47 hi ya yima kwihi?</p> <p>Vadyondzi: 77(swi kombise exitsalelwani)</p> <p>Mudyondzisi: Xana 77 i nhlamulo yo hetelela kumbe ha ha fanele ku <b>lulamisa</b>?</p> <p>Kombela vadyondzi ku hlamusela maehleketelelo ya ku lulamisa nhlamulo: Hi hlanganisile n'we yin'wana, kutani hi fanele ku susa n'we ku suka eka nhlamulo ku kuma 76.</p> <p>Kombisa leswi eka ndzhati wa mintsengo lowu nga exitsalelwani.</p> <p>Byela vadyondzi leswaku maendlelo lama ya ku katsakanya na ku lulamisa ya tirha kahle swinene loko yin'we ya tinomboro yi ri ekusuhi ngopfu na nomboro yo tirheka.</p> | <p><math>47 + 29</math></p> <p>Hlanganisa eka ndzhati wa mintsengo:</p> |
|--|---|

### Mgingiriko yo tirhiwa hi vadyondzi ha un'weun'we

Sweswi vadyondzi va fanele va ringeta swikombiso leswi landzelaka *emiehlekeweni*:

:

$$26 + 19 \qquad 54 + 39$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik.“eka 26 + 19, ndzi katsakanya 19 ku ya eka 20 kutani ndzi hlanganisa 20 eka 26 ku kuma 46; kutani ndzi lulamisa nhlamulo hi ku susa 1, ndzi kuma nhlamulo ya 45.” Loko u ri karhi u hlamusela maendlelo ya vadyondzi nakambe, tshikelela laha va katsakanyeke na laha va lulamiseke.

### Vhidiyo yo Seketela

Ku Katsakanya na ku Lulamisa 2



<https://youtu.be/fGILndzXfSY>

## KU KATSAKANYA & KU LULAMISA: XISUNGULA DYONDZO XA 3

### Xitoloveto xa Menthele xa Minete yi1

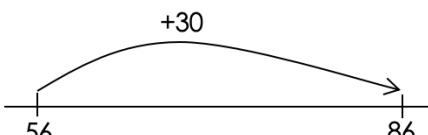
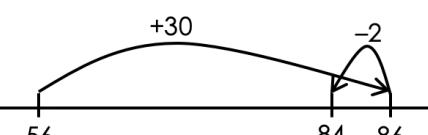
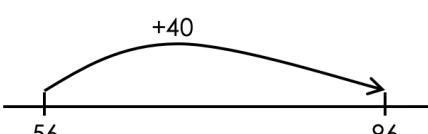
- a. Pop-Fizz: Matlulelo ku ya eka nomboro ya andziso wa 10 ya le kusuhi  
 b. Minkhakhuleto yo hatlisa: Susa 1, 2 kumbe 3

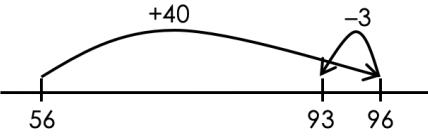
“Hi yihi ...?”

|                     |   |
|---------------------|---|
| Mudyondzisi: 63 – 1 | →Vadyondzi: 62                          |
| Mudyondzisi: 54 – 2 | →Vadyondzi: 52                          |
| Mudyondzisi: 78 – 1 | →Vadyondzi: 77                          |
| Mudyondzisi: 61 – 2 | →Vadyondzi: 59                          |
| Mudyondzisi: 52 – 3 | →Vadyondzi: 49      hi ndlela yaleyo... |

### Nongonoko wa Nghingiriko

Eka dyondzo leyi hi tirhisa qhingga ra ku katsakanya na ku lulamisa eka ku hlanganisa.

|  |  |
|--|--|
| <p>Mudyondzisi: Loko hi hlanganisa 28 kumbe 38 kumbe 48 eka nomboro, xana hi nga tirhisa qhingga ra ku katsakanya na ku lulamisa ke? Hi nga ri tirhisa ku hlamlula 56 + 28? Xana hi yihi nomboro yo tirheka leyi 28 yi nga ekusuhi na yona?</p> <p>Vadyondzi: 30</p> <p>Mudyondzisi: Loko hi katsakanya 28 ku ya eka 30 kutani hi tlula ka 30 ku ya emahlweni ku suka eka 56, xana hi ta yima kwihi?</p> <p>Vadyondzi: 86</p> <p>Mudyondzisi: Xana hi yi lulamisa ku yini 86?</p> <p>Kombela vadyondzi ku hlamusela maeleketelelo ya ku lulamisa nhlamlulo: Hi hlanganisile mbirhi yin'wana, kutani hi fanele ku susa mbirhi ku suka eka nhlamlulo ku kuma 84.</p> <p>Kombisa leswi eka ndzhati wa mintsengo lowu nga exitsalelwani.</p> | <p>56 + 28</p>  <p>Hlanganisa eka ndzhati wa mintsengo:</p>  <p>56 + 37</p>  <p>Hlanganisa eka ndzhati wa mintsengo:</p> |
| <p>Mudyondzisi: Hi nga hlanganisa ku yini 27 kumbe 37 kumbe 47 eka nomboro, xana hi nga tirhisa qhingga ra ku katsakanya na ku lulamisa ke? Hi nga ri tirhisa ku hlamlula 56 + 37? Xana hi yihi nomboro yo tirheka leyi 37 yi nga ekusuhi na yona?</p> <p>Vadyondzi: 40</p> <p>Mudyondzisi: Loko hi katsakanya 37 ku ya eka 40 kutani hi tlula ka 40 ku ya emahlweni, xana hi ta yima kwihi?</p>   |  |

|  |  |
|--|--|
| <p>Vadyondzi: 96<br/>         Mudyondzisi: Xana hi yi lulamisa ku yini 96?<br/>         Kombela vadyondzi ku hlamusela maehleketelelo ya ku lulamisa nhlamulo: Hi hlanganisile nharhu yin'wana, kutani hi fanele ku susa nharhu ku suka eka nhlamulo ku kuma 93.<br/>         Kombisa leswi eka ndzhati wa mintsengo lowu nga exitsalelwani.</p> |  |
|--|--|

### Mgingiriko yo tirhiwa hi vadyondzi ha un'weun'we

Sweswi vadyondzi va fanele va ringeta swikombiso leswi landzelaka *emiehlekeweni*:

$$25 + 18 \quad 44 + 48 \quad 65 + 27$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. "eka 25 + 18, ndzi katsakanyile 18 ku ya eka 20 kutani ndzi hlanganis 20 eka 25 ku kuma 45; kutani ndzi lulamisa nhlamulo hi ku susa 2, kutani nhlamulo i 43." Loko u ri karhi u hlamusela maendlelo ya vadyondzi nakambe, tshikelela laha va katsakanyeke na laha va lulamiseke.

### Vhidiyo yo Seketela

Ku Katsakanya na ku Lulamisa 3



[https://youtu.be/St5nSH\\_BdRE](https://youtu.be/St5nSH_BdRE)

**KU KATSAKANYA NA KU LULAMISA: XISUNGULA DYONDZO XA 4****Xitoloveto xa Menthele xa Minete yi1**

a. Vadyondzi hinkwavo va tlilasi va cincana hi ku vula nomboro ya le hansi leyi a yi vuriwile hi 10

Mudyondzisi u vula nomboro kutani vadyondzi hinkwavo etlilasini va hlamula hi ku cincana va vula nomboro leyi nga ehansi ka leyi a yi vuriwile hi 10.

Mudyondzisi: 128

Mudyondzi 1: 118 → Mudyondzi 2: 108 → Mudyondzi 3: 98 → Mudyondzi 4: 88 hi ndlela yaleyo.

b. Susa nomboro ya andziso wa 10

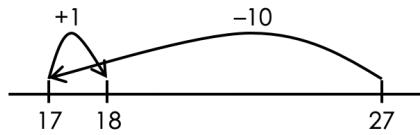
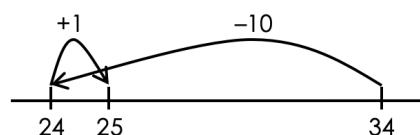
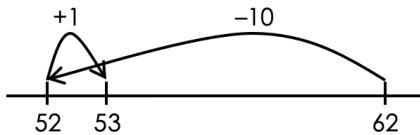
“Hi yihi...?”

Mudyondzisi:  $71 - 20 \rightarrow$  Vadyonzo: 51

Mudyondzisi:  $59 - 30 \rightarrow$  Vadyondzi: 29      hi ndela yaleyo...

**Nongonoko wa Nghingiriko**

Eka dyondzo leyi hi tirhisa qhingga ra ku katsakanya na ku lulamisa eka ku susa.

|   |  |
|---|--|
| <p>Mudyondzisi: Nakambe hi nga tirhisa qhingga ra ku katsakanya na ku lulamisa ku va hi susa tinomboro leti nga ekusuhi na tinomboro to tirheka.</p> <p>Loko hi hlanganisa 27 na 9, hi hlanganisa 10 kutani hi lulamisa hi ku susa n'we. Hi nga khakhuleta <math>27 - 9</math> tanihi <math>27 - 10</math> kutani hi lulamisa hi ku <b>hlanganisa 1</b> hikuva hi tekile 1.</p>   | $27 - 9 = 27 - 10$ kutani u hlanganisa 1<br>   |
| <p>Mudyondzisi: A hi endleni yin'wana minkakhuleto hi ku tirhisa ku katsakanya na ku lulamisa eka ku susa <math>34 - 9</math> yi fana na <math>34 - 10</math> (ku katsakanya) hi tlhela hi hlanganisa n'we (lulamisa).</p> <p>Dirowa ndzhati wa mintsengo hi ku ya hilaha swi kombisiweke hakona.</p> <p>Mudyondzisi: Kutani <math>34 - 9 = 25</math>.</p> <p>Tirha <math>62 - 9</math> tanihi xin'wana xikombiso lexi lavaka ku tirhiwa hi ndlela yo fanamu tlhala u kombisa ndzhati wa mintsengo exitsalelwani.</p> | $34 - 9$<br><br>$62 - 9$<br> |

**Micingiriko yo tirhiwa hi vadyondzi ha un'weun'we**

Sweswi vadyondzi va fanele va ringeta swikombiso leswi landzelaka emiehlekeweni:

$$23 - 9 \quad 48 - 9 \quad 76 - 9$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. "eka 23 – 9, ndzi katsakanya 9 ku ya eka 10 ndzi susa 10 eka 23 ku kuma 13; kutani ndzi lulamisa hlamula hi ku hlanganisa 1, kutani nhlamulo yi va 14." Loko u ri karhi u hlamusela maendlelo ya vadyondzi nakambe, tshikelela laha va katsakanyeke na laha va lulamiseke.

### **Nghingiriko wo famba na wona ekaya: Phepha ro tirhela ra 1**

Emakumu ka dyondzo ya namuntlha nyika vadyondzi phepha ro tirhela ra 1.

A wu fanelanga ku pimela vadyondzi nkarhi loko va ri karhi va tirha eka phepha leri. Xikongomelo i ku nyika vadyondzi nkarhi lesawku va titoloveta hi migingiriko yo tsala ya leswi va swi endleke emiehlekeweni.

### **Vhidiyo yo Seketela**

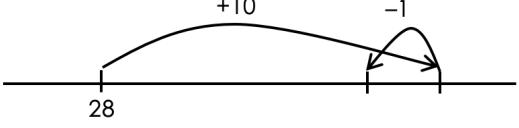
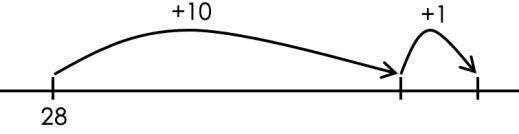
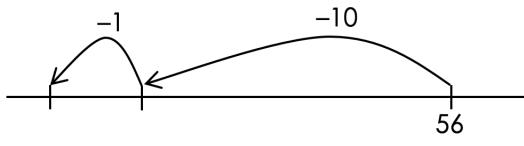
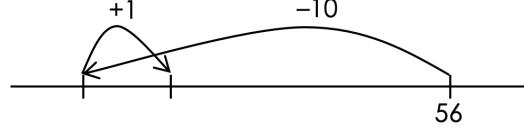
Ku Katsakanya na ku Lulamisa 4



<https://youtu.be/qyCQU1S6M8w>

Vito:

**Ku Katsakanya na Ku Lulamisa: Phepha Ro Tirhela Ra 1**

|  |  |
|--|--|
| 1. $46 + 40 =$ <input type="text"/>  | 11. $21 - 3 =$ <input type="text"/>  |
| 2. $57 - 10 =$ <input type="text"/>  | 12. $28 + 3 =$ <input type="text"/>  |
| 3. $32 - 3 =$ <input type="text"/>   | 13. $26 + 30 =$ <input type="text"/>   |
| 4. $71 - 2 =$ <input type="text"/>   | 14. $115 + 50 =$ <input type="text"/>  |
| 5. $167 - 70 =$ <input type="text"/>   | 15. mbirhihato wa 20 = <input type="text"/>  |
| 6. $38 =$ <input type="text"/> - 2   | 16. $19 =$ <input type="text"/> - 1  |
| 7. $68 +$ <input type="text"/> = 70  | 17. $32 -$ <input type="text"/> = 30   |
| 8. $99 = 100 -$ <input type="text"/>   | 18. $49 +$ <input type="text"/> = 50   |
| 9. mbirhihato wa 200 = <input type="text"/>  | 19. $27 = 30 -$ <input type="text"/>   |
| 10. Tsondzela ndzhati wa mintsengo lowu kombaka $28 + 9$ .<br><br><br><br> | 20. Tsondzela ndzhati wa mintsengo lowu kombaka $56 - 9$ .<br><br><br><br> |

**Tinotsi ta Mudyondzisi**

Laha u nga endla tinotsi hi dyondzo na ku kombisa leswaku i vadyondzi vahi lava va ha lavaka ku pfuniwa hi maqhingha yo hambanahambana.

Nakambe u nga endla tinotsi ta timhaka tin'wana na tin'wana leti u lavaka ku ti langutisa eka xisungula dyondzo lexi landzelaka

Ku Katsakanya na ku Lulamisa

**Vhidiyo yo Seketela**

Ku Katsakanya na ku Lulamisa 5



[https://youtu.be/VQ8va\\_RuHBQ](https://youtu.be/VQ8va_RuHBQ)

## KU KATSAKANYA NA KU LULAMISA: XISUNGULA DYONDZO XA 5

### Xitoloveto xa Menthele xa Minete yi1

a. Vadyondzi hinkwavo va tlilasi va cincana hi ku vula nomboro ya le hansi ka leyi a yi vuriwile hi 20, na hi 30

b. Pop-Fizz: Nomboro ya le kusuhi swinene na ya andziso wa 10

### Nongonoko wa Nghingiriko

Eka dyondzo leyi hi tirhisa qhingga ra ku katsakanya na ku lulamisa eka ku susa.

Mudyondzisi: Xana hi nga tirhisisa ku yini qhingga ra ku katsakanya na ku lulamisa ku hlamula 47 – 29?

Loko vadyondzi va tikeriwa ku hlamusela maendlelo, vutisa:

Mudyondzisi: hi yihi nomboro yo tirheka leyi 29 yi nga ekusuhi na yona?

Vadyondzi: 30

Mudyondzisi: Loko hi katsakanya 29 yi va 30 kutani hi tlula 30 ku ya endzhaku ku suka eka 47, Hi ta yima kwihi?

Vadyondzi: 17 (komba leswi exitsalelwani)

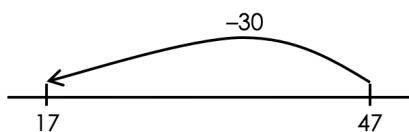
Mudyondzisi: Xana 17 i nhlamulo yo hetelela kumbe hi fanele hi **lulamisa** ke?

Kombela vadyondzi ku hlamusela maehleketelelo ya ku lulamisa nhlamulo: Hi susile n'we yin'wana, kutani hi fanele ku hlanganisa n'we eka nhlamulo ku kuma 18.

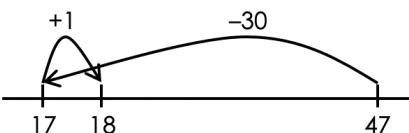
Kombisa leswi eka ndzhati wa mintsengo exitsalelwani.

Byela vadyondzi leswaku maendlelo lama ya ku katsakanya na ku lulamisa ya tirha kahle swinene loko yin'we ya tinomboro yi ri ekusuhi ngopfu na nomboro yo tirheka.

47 – 29



Add to the number line:



### Mgingiriko yo tirhiwa hi vadyondzi ha un'weun'we

Sweswi vadyondzi va fanele va ringeta swikombiso leswi landzelaka emiehlekeweni:

$$28 - 19 \quad 54 - 39$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik.“eka 28 – 19, ndzi katsakanya 19 ku ya eka 20 kutani ndzi susa 20 eka 28 ku kuma 8; kutani ndzi lulamisa nhlamulo hi ku hlanganisa 1, kutani nhlamulo i 9.” Loko u ri karhi u hlamusela maendlelo ya vadyondzi nakambe, tshikelela laha va katsakanyeke na laha va lulamiseke.

## KU KATSAKANYA NA KU LULAMISA: XISUNGULA DYONDZO XA 6

### Xitoloveto xa Menthele xa Minete yi1

a. Pop-Fizz: Matlulelo ku ya eka nomboro ya andziso wa 10 ya le kusuhi swinene (hlawula tinomboro leti ti nga na 7, 8 na 9 eka vun'we, xik.  $27 \rightarrow 30$ ;  $58 \rightarrow 60$ ;  $49 \rightarrow 50$ )

b. Minkhakhuleto yo hatlisa: Hlanganisa 1, 2 kumbe 3

"Hi yihi ...?"

Mudyondzisi:  $61 + 2 \rightarrow$  Vadyondzi: 63

Mudyondzisi:  $52 + 3 \rightarrow$  Vadyondzi: 55

Mudyondzisi:  $77 + 1 \rightarrow$  Vadyondzi: 78

Mudyondzisi:  $69 + 2 \rightarrow$  Vadyondzi: 71

Mudyondzisi:  $58 + 3 \rightarrow$  Vadyondzi: 61      hi ndlela yaleyo...

### Nongonoko wa Nghingiriko

Eka dyondzo leyi hi tirhisa qhingga ra ku katsakanya na ku lulamisa eka ku susa.

Mudyondzisi: Loko hi hlanganisa 28 kumbe 38 kumbe 48 eka nomboro, xana hi nga tirhisa qhingga ra ku katsakanya na ku lulamisa ke? Hi nga ri tirhisa ku hlamula  $56 - 28$ ?

Loko vadyondzi va tikeriwa ku hlamusela maendlelo, vutisa:

Mudyondzisi: hi yihi nomboro yo tirheka leyi 28 yi nga ekusuhi na yona?

Vadyondzi: 30

Mudyondzisi: Loko hi katsakanya 28 yi va 30 kutani hi tlula 30 ku ya endzhaku ku suka eka 56, Hi ta yima kwih?

Vadyondzi: 26 (kombisa leswi eka ndzhati wa mintsengo exitsalelwani)

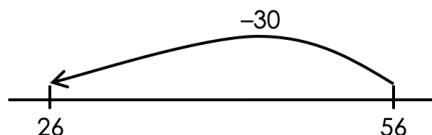
Mudyondzisi: Xana hi fanele hi lulamisa hi ndlela yini 26?

Kombela vadyondzi ku hlamusela maehleketelelo ya ku lulamisa nhlamulo: Hi susile mbirhi yin'wana, kutani hi fanele ku hlanganisa mbirhi eka nhlamulo ku kuma 28.

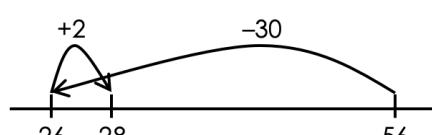
Kombisa leswi eka ndzhati wa mintsengo exitsalelwani.

Mudyondzisi: Loko hi hlanganisa 27 kumbe 37 kumbe 47 eka nomboro, xana hi nga tirhisa qhingga ra ku katsakanya na ku lulamisa ke? Hi nga ri tirhisa ku hlamula  $56 - 37$ ?

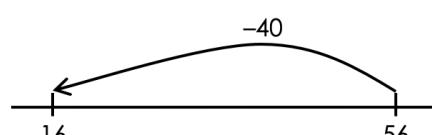
$56 - 28$

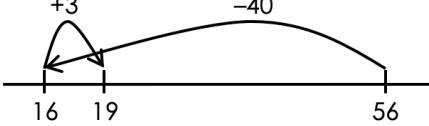


Hlanganisa eka ndzhati wa mintsengo:



$56 - 37$



|   |  |
|---|--|
| <p>Loko vadyondzi va tikeriwa ku hlamusela maendlelo, vutisa:</p> <p>Mudyondzisi: Hi yihi nomboro yo tirheka leyi 37 yi nga ekusuhi na yona?</p> <p>Vadyondzi: 40</p> <p>Mudyondzisi: Loko hi katsakanya 37 yi va 40 kutani hi tlula 40 ku ya endzhaku ku suka eka 56, Hi ta yima kwih?</p> <p>Vadyondzi: 16 (kombisa leswi e exitsalelwani)</p> <p>Mudyondzisi: Xana hi fanele hi lulamisa hi ndlela yini 16?</p> <p>Kombela vadyondzi ku hlamusela maehleketelelo ya ku lulamisa nhlamulo: Hi susile nharhu yin'wana, kutani hi fanele ku hlanganisa nharhu eka nhlamulo ku kuma 19.</p> <p>Kombisa leswi eka ndzhati wa mintsengo exitsalelwani.</p> | <p>Hlanganisa eka ndzhati wa mintsengo:</p>  |
|---|--|

### **Migingiriko yo tirhiwa hi vadyondzi ha un'weun'we**

Sweswi vadyondzi va fanele va ringeta swikombiso leswi landzelaka *emiehlekeweni*:

$$45 - 18 \quad 84 - 48 \quad 65 - 27$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona xik.“eka 45 – 18, ndzi katsakanya 18 ku ya eka 20 kutani ndzi susa 20 ku suka eka 45 ku kuma 25; kutani ndzi katsakanya nhlamulo hi ku hlanganisa 2, kutani nhlamulo i 27.” Loko u ri karhi u hlamusela maendlelo ya vadyondzi nakambe, tshikelela laha va katsakanyeke na laha va lulamiseke.

### **Vhidiyo yo Seketela**

Ku Katsakanya na ku Lulamisa 6



<https://youtu.be/kG9NCQ9gBPY>

## KU KATSAKANYA NA KU LULAMISA: XISUNGULA DYONDZO XA 7

### Xitoloveto xa Menthele xa Minete yi1

- a. Pop-Fizz: nomboro ya andziso wa 10 ya le kusuhi swinene
- b. Pop-Fizz: Matlulelo ku ya eka nomboro ya andziso wa 10 ya le kusuhi swinene

### Nongonoko wa Nghingiriko

Eka dyondzo leyi hi tirhisa qhingga ra ku katsakanya na ku lulamisa eka minkakhuleto laha ku nga katsakanyiwaka tinomboro to tlula yin'we.

|  |  |
|--|--|
| <p>Mudyondzisi: Hi nga tirhisa ku katsakanya na ku lulamisa loko tinomboro hatimbirhi ti ri ekusuhi na tinomboro to tirheka, xik. 19 + 39.</p> <p>Komba vadyondzi maendlelo ya ku katsakanya na ku lulamisa exitsalelwani hi 19 + 39.</p> <p>Loko u ri karhi u tsala exitsalelwani, hlamusela:</p> <p>Mudyondzisi: Hi nga katsakanya tinomboro hatimbirhi ku ya eka 20 na 40 kutani hi ti hlanganisa ku kuma 60. Hi hlanganisile 1 eka yin'wana na yin'wana ya tinomboro kutani hi fanele hi lulamisa hi ku susa 2 eka 60 ku kuma 58.</p> <p><i>Lemuka: Loko hi ri karhi hi lulamisa tinomboro hatimbirhi, hi kombisa leswi eka nkhakhuleto lowu tsariweke ku nga ri eka ndzhati wa mintsengo.</i></p> | $  \begin{aligned}  & 19 + 39 \text{ (katsakanya hatimbirhi)} \\  & = 20 + 40 \text{ u tlhela u katsakanya - 2} \\  & \quad (- 1 \text{ eka yin'wana na yin'wana}) \\  & = 60 - 2 \\  & = 58  \end{aligned}  $ |
| <p>Mudyondzisi: Xana u nga swi tirha hi ndlela yihi swa ku lulamisa eka 28 + 49?</p> <p>Komba vadyondzi maendlelo ya ku katsakanya na ku lulamisa eka nkhakhuleto lowu exitsalelwani.</p>  | $  \begin{aligned}  & 28 + 49 \text{ (katsakanya hatimbirhi)} \\  & = 30 + 50 \text{ kutani u lulamisa - 3} \\  & \quad (- 2 \text{ na } - 1) \\  & = 80 - 3 \\  & = 77  \end{aligned}  $                      |
| <p>Mudyondzisi: U nga swi tirhisa hi ndlela yihi ku katsakanya na ku lulamisa eka 57 + 59 + 48?</p> <p>Komba vadyondzi maendlelo ya ku katsakanya na ku lulamisa eka nkhakhuleto lowu exitsalelwani.</p>   | $  \begin{aligned}  & 57 + 59 + 48 \text{ (katsakanya hinkwato)} \\  & = 60 + 60 + 50 \text{ kutani u lulamisa - 6} \\  & \quad (- 3, - 1, - 2) \\  & = 170 - 6 \\  & = 164  \end{aligned}  $                  |

### **Migingiriko yo tirhiwa hi vadyondzi ha un'weun'we**

Sweswi vadyondzi va fanele va ringeta swikombiso leswi landzelaka emiehlekeweni:

$$38 + 29 \quad 57 + 28 \quad 19 + 19 + 19$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. "eka 38 + 29, ndzi katsakanya 38 ku ya eka 40 na 29 ku ya eka 30 kutani ndzi hlanganisa 40 na 30 ku kuma 70, eku heteleleni ndzi lulamisa nhlamulo hi ku susa 3, kutani nhlamulo yi va 67." Loko u ri karhi u hlamusela maendlelo ya vadyondzi nakambe, tshikelela laha va katsakanyeke na laha va lulamiseke.

Loko vadyondzi va tikeriwa hi ku hlamusela matirhelo ya vona, va kombele va ku komba maendlelo ya vona hi ku tsala (hi ku ya hi laha swi tsariweke ha kona).

### **Nghingiriko wo famba na wona ekaya: Phepha ro tirhela ra 2**

Emakumu ka dyondzo ya namuntlha nyika vadyondzi Phepha ro tirhela ra 2.

A wu fanelanga ku pimela vadyondzi nkarhi loko va endla nghingiriko lowu. Xikongomelo i ku nyika vadyondzi xitoloveto xo tsariwa xa ntirho lowu va wu endleke emiehlekeweni.

### **Vhidiyo yo Seketela**

Ku Katsakanya na ku Lulamisa 7



<https://youtu.be/0TOGmefwNxQ>

Vito:

**Ku Katsakanya na Ku Lulamisa: Phepha Ro Tirhela Ra 2**

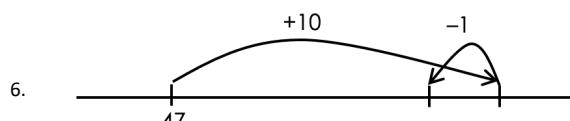
1.  $56 + 29 =$

2.  $54 - 38 =$

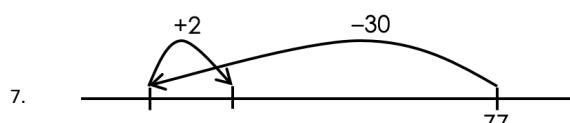
3.  $45 + 37 =$

4.  $325 - 99 =$

5.  $47 + 49 + 48 =$



$$47 + \boxed{\quad} = 47 + 10 - 1$$



$$77 - 28 = 77 - 30 + \boxed{\quad}$$

8.  $66 + 28 = 66 + \boxed{\quad} - 2$

9.  $95 - 39 = 95 - \boxed{\quad} + 1$

10. Tsondzela xivulwa xa nomboro lexi nyikaka nhlamulo yo fana na:

$$80 - 39$$

$$80 + 40 - 1$$

$$80 + 40 + 1$$

$$80 - 40 + 1$$

$$80 - 40 - 1$$

**Tinotsi ta Mudyondzisi**

Laha u nga endla tinotsi hi dyondzo na ku kombisa leswaku i vadyondzi vahi lava va ha lavaka ku pfuniwa hi maqhingha yo hambanahambana.

Nakambe u nga endla tinotsi ta timhaka tin'wana na tin'wana leti u lavaka ku ti langutisa eka xisungula dyondzo lexi landzelaka

## KU KATSAKANYA NA KU LULAMISA: XISUNGULA DYONDZO XA 8

### Xitoloveto xa Menthele xa Minete yi1

Vadyondzi hinkwavo va tlilasi va cincana hi ku vula nomboro ya le henhla ka leyi a yi vuriwile hi 20, na hi 30, na ya le hansi hi 30, hi 40

### Nongonoko wa Nghingiriko

Eka dyondzo leyi hi hlawula maendlelo lama ya nga kahle swinene ku ma tirhisa, hi tlhela hi tirhisa maendlelo ya ku katsakanya na ku lulamisa eka minkhakhuleto laha maendlelo lama ya vaka ya ri wona yo olova swinene.

|  |   |
|--|---|
| <p>Tsala ka mune tinhlayo hi timbirhimbirhi exitsalelweni ku ya hilaha swi kombisiweke ha kona kutani u kombela vadyondzi va vula leswaku:</p> <ul style="list-style-type: none"> <li>• hi tihi leti va nga ta tirhisa maendlelo ya ku katsakanya na ku lulamisa eka tona</li> <li>• hi tihi leti va nga ta tirhisa maendlelo ya ku hamana eka tona (qhingga ra ku tlula, ku tlula ku ya eka khume, na ku mbirihata)</li> </ul> <p>Kombela vadyondzi leswaku va vula swivangelo swa leswi va swi hlawuleke.</p> <p><i>Lemuka: 99 + 99 loko yi tirhiwa tanahi 100 + 100 – 2 ku tirhisiwa ku katsakanya, ku mbirihata (mbirihato wa 100 i 200) na ku lulamisa.</i></p> <p>Burisana na vadyondzi u va kombisa leswaku loko va tiva maqchingha yo tala, va ta swi kota ku hlawula qhingga leri ku nga rona ro hatlisa ngopfu ku ri tirhisa naswona va nga tirhisa maqchingha hinkwawo.</p> | <p>38 + 49<br/>22 + 36<br/><br/>38 – 13<br/>47 – 29<br/><br/>29 + 38 + 39<br/>14 + 24 + 33<br/><br/>99 + 99<br/>45 + 45</p> |
| <p>Kombela vadyondzi ku burisana hi laha va nga tirhisaka ha kona ku katsakanya na ku lulamisa ku hlamlula leswi landzelaka:</p> <p>38 + 49<br/>47 – 29<br/>29 + 38 + 39</p> <p>Vadyondzi va fanele va vula swin'wana swo fana na:</p> <ul style="list-style-type: none"> <li>• katsakanya 38 ku ya eka 40 na 49 ku ya eka 50, hlanganisa 40 na 50 ku kuma 90, kutani u lulamisa hi ku susa 3 eka 90.</li> <li>• katsakanya 29 ku ya eka 30, susa 30 eka 47 ku kuma 17, kutani u lulamisa hi ku hlanganisa 1 nakambe ku kuma 18.</li> <li>• katsakanya 29 ku ya eka 30 kutani u katsakanya hatimbirhi 38 na 39 ku ya eka 40, kutani u</li> </ul>   | <p>38 + 49<br/>47 – 29<br/>29 + 38 + 39</p>   |

|  |  |
|--|--|
| hlanganisa 30 na 40 na 40 ku kuma 110 kutani u lulamisa hi ku susa 4 ku kuma 106.  |  |
| Kombela vadyondzi ku hlamula hi ku vulavula va hetisa swivulwa leswi: <ul style="list-style-type: none"> <li>• Ku hlanganisa 18 eka nomboro, ndzi hlanganisa _____ kutani ndzi susa _____</li> <li>• Ku susa 18 eka nomboro ndzi susa _____ kutani ndzi hlanganisa _____</li> </ul> Kombela vadyondzi ku hetisa swibokisana leswi tsariweke exitsalelwani hi laha swi kombisiweke ha kona. | Ku hlanganisa 38 swi nyika nhlamulo yo fana na:<br><input type="checkbox"/> + <input type="checkbox"/> -<br>Ku susa 49 swi nyika nhlamulo yo fana na:<br>- <input type="checkbox"/> + <input type="checkbox"/><br>Ku hlanganisa 99 swi nyika nhlamulo yo fana na:<br>+ <input type="checkbox"/> - <input type="checkbox"/><br>Ku susa 28 swi nyika nhlamulo yo fana na:<br>- <input type="checkbox"/> + <input type="checkbox"/> |

**Mgingiriko yo tirhiwa hi vadyondzi ha un'we-un'we**

Sweswi vadyondzi va fanele va ringeta swikombiso leswi landzelaka *emiehlekeweni*:

$$29 + 48 \quad 37 - 28 \quad 39 + 28 + 49$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. "eka 29 + 48, ndzi katsakanya 29 ku ya eka 30 na 48 ku ya eka 50 kutani ndzi hlanganisa 50 na 30 ku kuma 80, kutani ndzi lulamisa nhlamulo hi ku susa 3, kutani nhlamulo yi va 57." Loko u ri karhi u hlamusela maendlelo ya vadyondzi nakambe, tshikelela laha va katsakanyeke na laha va lulamiseke.

Loko vadyondzi va tikeriwa hi ku hlamusela matirhelo ya vona, va kombele va ku komba maendlelo ya vona hi ku tsala.

**Vhidiyo yo Seketela**

Ku Katsakanya na ku Lulamisa 8



[https://youtu.be/mij\\_d45rw00](https://youtu.be/mij_d45rw00)

Vito:

**Ku Katsakanya na Ku Lulamisa: Xikambelwana Emakumu ka Dyondzo****XIYENGE XA 1****Timinete ti2 eka papila leri**

|                                      |  |
|--------------------------------------|--|
| 1. $34 + 20 =$ <input type="text"/>  | 11. $29 + 2 =$ <input type="text"/>          |
| 2. $42 - 3 =$ <input type="text"/>   | 12. $68 + 10 =$ <input type="text"/>         |
| 3. $57 - 10 =$ <input type="text"/>  | 13. $38 + 3 =$ <input type="text"/>          |
| 4. $51 - 2 =$ <input type="text"/>   | 14. $145 + 30 =$ <input type="text"/>        |
| 5. $178 - 30 =$ <input type="text"/> | 15. $97 - 60 =$ <input type="text"/>         |
| 6. $43 + 40 =$ <input type="text"/>  | 16. $48 =$ <input type="text"/> - 2          |
| 7. $29 =$ <input type="text"/> - 1   | 17. $79 +$ <input type="text"/> = 80         |
| 8. $37 +$ <input type="text"/> = 40  | 18. mbirhihato wa 50 = <input type="text"/>  |
| 9. $97 = 100 -$ <input type="text"/> | 19. mbirhihato wa 100 = <input type="text"/> |
| 10. $88 +$ <input type="text"/> = 90 | 20. $28 +$ <input type="text"/> = 30         |

**Ntsengo 20**

**Ku Katsakanya na Ku Lulamisa: Xikambelwana Emakumu ka Dyondzo**

XIYENGE XA 2

Timinete ti3 eka papila leri

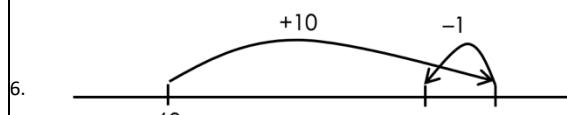
1.  $34 + 19 =$

2.  $54 - 29 =$

3.  $27 + 98 =$

4.  $234 - 99 =$

5.  $97 + 98 + 99 =$



$68 +$    $= 68 + 10 - 1$



$67 - 18 = 67 - 20 +$

8.  $56 + 28 = 56 +$    $- 2$

9.  $84 - 39 = 84 -$    $+ 1$

Tsondzela xivulwa xa nomboro lexi nkyikaka nhlamulo yo fana na:

10.  $60 - 29$

$60 - 30 + 1$

$60 + 30 + 1$

$60 + 30 - 1$

$60 - 30 - 1$

**Ntsengo 10**

## KU VEKETELA HI VUNTSHWA

### Manghenelo

Swisungula dyondzo eka xiyege lexi swi kongomana na ku veketela hi vuntshwa na le ka tindlela to hambanahambana laha ku veketela hi vuntshwa (ku cinca mavekelo ya tinomboro eka nkhakhuleto) swi nga endlaka minkhakhuleto ya ku hlanganisa na ku andzisa yi olova ku yi tirha. Hakanyingi, leswi swi katsa ku kuma maveketetelelo lama endlaka tinomboro to tirheka leti ti olovaka ku tirha hi tona. Tinomboro to tirheka i tinomboro leti swi olovaka swinene ku tirha hi tona, naswona hakanyingi leti i tinomboro ta andziso wa khume. Yin'wana ya mintirho yi fanele ku rhangeriwa hi mudyondzisi exitsalelwani kasi yin'wana i ya leswaku vadyondzi va tiindlela va ri vox.

### Vuswikoti byo Tsundzuka hi ku Hatlisa

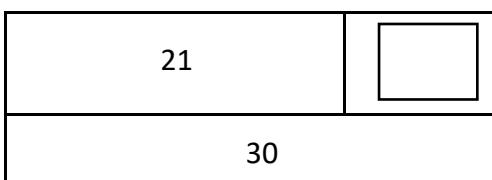
Ku na vuswikoti byo tsundzuka hi ku hatlisa byi mbirhi lebyi vadyondzi va faneleke ku dyondza eka qhingga ra ku veketela hi vuntshwa:

- Ku lemuka maveketetelelo ya tinomboro leti ti hlanganisiwaka, kumbe leti engeteriwaka, ku ya eka tinomboro ta miandziso ya 10 (xik. 6 na 4 kumbe 3 na 7, nakambe 16 na 4 kumbe 32 na 18)
- Ku lemuka maveketetelelo ya tinomboro leti ti nga andzisiwaka ku endla tinomboro ta miandziso ya 10 (xik.  $2 \times 5$ ,  $5 \times 4$ ).

Vito:

**Ku Veketela hi Vuntshwa: Xikambelwana ku nga si sungula Dyondzo****XIYENGE XA 1**

Timinete ti2 eka papila leri

|  |   |
|--|---|
| 1. Tsondzela tinomboro timbirhi leti hlanganisiwaka<br>ku nyika 10.<br>7 4 2 3 9       | 11. $100 + 14 = \boxed{\quad}$  |
| 2. Tsondzela tinomboro timbirhi leti hlanganisiwaka<br>ku nyika 10.<br>5 4 1 6 8       | 12. $2 \times 5 = \boxed{\quad}$  |
| 3. $6 + \boxed{\quad} = 10$  | 13. Tsondzela tinomboro timbirhi leti<br>hlanganisiwaka ku nyika 20.<br>8 14 12 3 19          |
| 4. $9 + 11 = \boxed{\quad}$  | 14. Tsondzela tinomboro timbirhi leti<br>hlanganisiwaka ku nyika 20.<br>15 4 1 16 8           |
| 5. Tsondzela tinomboro timbirhi leti hlanganisiwaka<br>ku nyika 100.<br>24 50 30 38 70 | 15. $50 \times 2 = \boxed{\quad}$   |
| 6. Tsondzela tinomboro timbirhi leti hlanganisiwaka<br>ku nyika 100.<br>51 17 29 49 60 | 16. $140 + \boxed{\quad} = 149$   |
| 7. $20 = 8 + \boxed{\quad}$  | 17. Tsondzela tinomboro timbirhi leti<br>hlanganisiwaka ku nyika 30.<br>18 14 12 7 19         |
| 8. $\boxed{\quad} + 3 = 20$  | 18. Tsondzela tinomboro timbirhi leti<br>hlanganisiwaka ku nyika 30.<br>10 14 9 16 13         |
| 9.  | 19. $\begin{array}{r} & \\ + & \hline 69 \\ \hline \end{array}$<br>$69 + \boxed{\quad} = 100$ |
| 10. $56 + 30 = \boxed{\quad}$  | 20. $22 + 18 = \boxed{\quad}$   |

**Ntsengo 20**

**Ku Veketela hi Vuntshwa: Xikambelwana ku nga si sungula Dyondzo****XIYENGE XA 2**

Timinete ti3 eka papila leri

1.  $6 + 98 = \boxed{\phantom{00}}$

2.  $17 + 48 + 13 = \boxed{\phantom{00}}$

3.  $199 + 98 + 1 + 2 = \boxed{\phantom{00}}$

4.  $37 + 56 + 13 = \boxed{\phantom{00}}$

5.  $38 + 125 + 15 = \boxed{\phantom{00}}$

6.  $2 \times 7 \times 5 = \boxed{\phantom{00}}$

7.  $6 + 98 = 98 + \boxed{\phantom{00}}$

8.  $96 + 58 + 4 = 100 + \boxed{\phantom{00}}$

9.  $99 + 97 + 1 + \boxed{\phantom{00}} = 200$

Tsondzela tinomboro timbirhi ta kahle ngopfu leti nga hlanganisiwaka ku sungula eka

10. ntlawa lowu:

37    88    12

**Ntsengo 10**

**KU VEKETELA HI VUNTSHWA: XISUNGULA DYONDZO XA 1****Xitoloveto xa Menthele xa Minete yi1**

Ndza vula/wa vula: Endla 10/Endla 20

- a. Mudyondzisi u vula nomboro ya dijiti yin'we kutani a kombisa eka mudyondzi ku hlamula hi ku vula nomboro leyi hlanganisiwaka na leyi yi vuriweke ku kuma 10.

|                |   |   |
|----------------|---|---|
| Mudyondzisi: 6 | → | Mudyondzi 1: 4                          |
| Mudyondzisi: 3 | → | Mudyondzi 2: 7                          |
| Mudyondzisi: 2 | → | Mudyondzi 3: 8      hi ndlela yaleyo... |

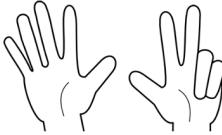
- b. Mudyondzisi u vula nomboro leyi nga exikarhi ka 1 na 20 kutani a kombisa eka mudyondzi ku hlamula hi ku vula nomboro leyi hlanganisiwaka na leyi yi vuriweke ku kuma 20.

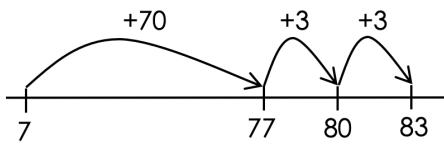
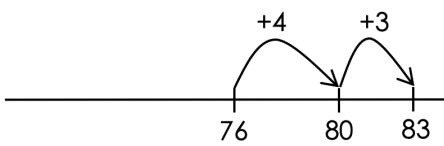
|                 |   |   |
|-----------------|---|---|
| Mudyondzisi: 12 | → | Mudyondzi 1: 8                            |
| Mudyondzisi: 13 | → | Mudyondzi 2: 7                            |
| Mudyondzisi: 5  | → | Mudyondzi 3: 15      hi ndlela yaleyo ... |

Haswimbirhi swintlangwana leswi swi nga tlangiwa hi vadyondzi hi vambirhimbirhi. Eka switoloveto leswi nga ta landzela xintlangwana lexi xa ndlandlamuxiwa ku endla tin'wana tinomboro ta miandziso ya khume.

**Nongonoko wa Nghingiriko**

Eka dyondzo leyi hi dyondzisa ro sungula maendlelo ya ku veketela hi vuntshwa.

|   |                                 |
|---|---------------------------------|
| Tirhisa tintiho ta wena ku komba $5 + 3$ tani hilaha swi kombisiweke ha kona laha hansi kutani u tsala $5 + 3$ exitsalelweni:                           | Tsala exitsalelweni:<br>$5 + 3$ |
|    |                                 |
| Mudyondzisi: Laha ndzi le ku kombeni 5 wa tintiho na tin'wana ti3   |                                 |
| Cincanisa swandla swa wena (vona leswi swi kombisiweke laha hansi):   | $5 + 3 = 3 + 5$                 |
|    |                                 |
| Mudyondzisi: Sweswi laha ndzi na $3 + 5$ , kambe ndza ha ri na nhlayo yo fana ya tintiho leti kombisiweke. Kutani ha swi vona leswaku $5 + 3 = 3 + 5$ . |                                 |
| Tsala $5 + 3 = 3 + 5$ exitsalelweni.  |                                 |
| Endla swikombiso swotalanyana u tirhisa tintiho na ku cincanisa swandla swa wena, xik. $4 + 1 = 1 + 4$ .  |                                 |

|   |   |
|---|---|
| <p>Mudyondzisi: Loko hi hlanganisa tinomboro, mavekelo ya tona loko hi ti hlanganisa a ya na nkoka.</p>   |   |
| <p>Khoma xibye lexikulu hi voko rin'we, khoma lexintsongonyana hi leri n'wana.</p>  <p>Mudyondzisi: Ehleketa leswaku ndzi na 7 swiwitsi eka xibye lexi (kombisa xibye lexintsongonyana) na 76 swiwitsi eka xibye lexi (kombisa xibye lexikulunyana), kutani ndzi na <math>7 + 76</math> wa swiwitsi.</p> <p>Cincanisa swandla swa wena u nga si vula ku:</p> <p>Mudyondzisi: Sweswi laha ndzi na <math>76 + 7</math>, kambe ndza ha ri na nhlayo yo fana ya swiwitsi. Kutani <math>7 + 76 = 76 + 7</math>.</p>                           | <p>Tsala exitsalelwani:</p> $7 + 76 = 76 + 7$   |
| <p>Mudyondzisi: Xana swa hatlisanyana ku tirha <math>7 + 76</math> kumbe <math>76 + 7</math>? Tirhisa mindzhati ya mintsengo mi mbirhi ku komba leswaku ku hlanganisa 7 eka 76 swi hatlisanyana ku tlula ku hlanganisa 76 eka 7 hikuva kun a mintlulo yintsongonyana.</p> <p>Dirowa mindzhati ya mintsengo mi mbirhi exitsalelwani ku komba leswi.</p> <p>Lemuka: Ndzhati wa mintsengo wu komba ku hlanganisa 7hi ku hlanganisa 4 eka 76 ku kuma 80, kutani u hlanganisa 3. Vadyondzi van'wana va nga swi kota ku hlanganisa 7 xikan'wekan'we. Leswi swi kahle. Tsundzuxa vadyondzi leswaku va nga hlayeli hi van'we.</p> | <p><math>7 + 76</math></p>  <p><math>76 + 7</math></p>  |

### Micingiriko yo tirhiwa hi vadyondzi ha un'weun'we

Hi yihi eka minkhakhuleto leyi yi landzelaka leyi nga veketeriwaka hi vuntshwa loko yi nga si endliwa? Vadyondzi va nga tirhisa mpfapfarhuto wa ndzhati wa mintsengo ku va pfuna loko va swi lava.

$$5 + 46 \quad 86 + 6 \quad 7 + 68 \quad 84 + 9$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. "eka  $5 + 46$ , ndzi veketela hi vuntshwa ku vula  $46 + 5$ , kutani ndzi hlanganisa 4 eka  $46$  ku kuma  $50$  kutani ndzi hlanganisa 1 ku ya eka  $50$  ku kuma  $51$ ."

Byela vadyondzi leswaku VA NGA hlayeli hi va1.

**Vhidiyo yo Seketela**

Ku Veketela hi Vuntshwa 1



<https://youtu.be/FIIM2einnNo>

**Vhidiyo yo Seketela**

Ku Veketela hi Vuntshwa 2



<https://youtu.be/PdZN9ZWaoDQ>

**KU VEKETELA HI VUNTSHWA: XISUNGULA DYONDZO XA 2****Xitoloveto xa Menthele xa Minete yi1**

Minkhakhuleto yo yelana (xik.  $8 + 2 \rightarrow 10$ ;  $18 + 2 \rightarrow 20$ ;  $28 + 2 \rightarrow 30$ )

Mudyondzisi u tsala nkhakhuleto wo sungula exitsalelwani:

$$8 + 2 = 10$$

Mudyondzisi u byela tlilasi leswaku ha swi tiva leswaku loko 8 yi hlanganisiwa na 2 yi nyika 10 a tlhela a kombela nhlamulo ya nkhakhuleto ;owu yelanaka. Kombisa leswaku ivadyondzi vahi lava faneleke ku hlamula.

Mudyondzisi:  $18 + 2 \rightarrow$  Mudyondzi 1: 20

Mudyondzisi:  $28 + 2 \rightarrow$  Mudyondzi 2: 30

Mudyondzisi:  $38 + 2 \rightarrow$  Mudyondzi 3: 40 hi ndlela yaleyo...

**Nongonoko wa Nghingiriko**

Eka dyondzo leyi hi tirhisa qhingga ra ku veketela hi vuntshwa.

|   |  |           |           |          |          |          |           |
|---|--|-----------|-----------|----------|----------|----------|-----------|
| <p>Xiphiko: <math>5 + 47</math></p> <p>Mudyondzisi: Ku khakhuleta <math>5 + 47</math> hi nga sungula eka 5 hi tlula hi ya emahlweni hi 47, kumbe hi nga sungula eka 47 hi tlula hi ya emahlweni hi 5. Hi swihi swi nga ta hatlisanyana?</p> <p>Dirowa mindzhati ya mintsengo yak u kombisa maendlelo hamambirhi exitsalelwani loko swi koteke ku komba leswaku <math>47 + 5</math> yi na mintlulo leyintsongonyana.</p> | <p><math>5 + 47</math></p> <p>Tsala:</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td><math>23 + 9</math></td> <td><math>15 + 47</math></td> <td><math>8 + 63</math></td> </tr> <tr> <td><math>68 + 7</math></td> <td><math>6 + 93</math></td> <td><math>57 + 26</math></td> </tr> </table> <div style="text-align: center; border: 1px solid black; border-radius: 50%; padding: 10px; margin: 10px auto; width: fit-content;">         Veketela hi Vuntshwa     </div> <div style="text-align: center; border: 1px solid black; border-radius: 50%; padding: 10px; margin: 10px auto; width: fit-content;">         U nga veketeli hi Vuntshwa     </div> | $23 + 9$  | $15 + 47$ | $8 + 63$ | $68 + 7$ | $6 + 93$ | $57 + 26$ |
| $23 + 9$  | $15 + 47$  | $8 + 63$  |           |          |          |          |           |
| $68 + 7$  | $6 + 93$   | $57 + 26$ |           |          |          |          |           |

**Mgingiriko yo tirhiwa hi vadyondzi ha un'weun'we**

Sweswi vadyondzi va fanele va tirhisa swidirowiwa swa mindzhati ya mintsengo ku endla minkhakhuleto leyi landzelaka. Vadyondzi va fanele va tsala nkhakhuleto lowu veketeriweke hi vuntshwa, va dirowa ndzhati wa mintsengo kutani va tsala nhlamulo:

$$8 + 63 \quad 6 + 97$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. "eka  $8 + 63$ , ndzi yi veketela hi vuntshwa hi ndlela leyi  $63 + 8$ , kutani ndzi hlanganisa 7 eka 63 ku kuma 70 kutani ndzi hlanganisa 1 eka 70 ku kuma 71."

Byela vadyondzi leswaku VA NGA hlayeli hi va1.

**KU VEKETELA HI VUNTSHWA: XISUNGULA DYONDZO XA 3****Xitoloveto xa Menthele xa Minete yi1**

Xintlangwana xa ku rhendzeleka hi tlilasi: Ku endla tinomboro to tirheka

Mudyondzisi u tsala swivulwa swa tinomboro swinharhu leswi nga katsakanyiwaka exitsalelwani leswi kombaka tinomboro to tirheka, xik.  $7 + 3 = 10$   $17 + 3 = 20$

$$37 + 3 = 40$$

Hi ku katsa tlilasi hinkwayo, vutisa vadyondzi hi swin'wana swivulwa swa tinomboro leswi yelanaka na patironi leyi leswi endlaka tinomboro to tirheka. Tsala leswi vadyondzi va swi vulaka exitsalelwani.

Mudyondzi 1:  $47 + 3 = 50$  → Mudyondzi 2:  $87 + 3 = 90$  → Mudyondzi 3:  $107 + 3 = 110$  → na swin'wana.

Vadyondzi van'wana va ta vula va ku  $17 + 13 = 30$  or  $37 + 23 = 60$ . Na swona leswi swi nga tsariwa.

**Nongonoko wa Nghingiriko**

Eka dyondzo leyi hi kuma nkatsano wa tinomboro wo tirheka ku endla minkhakhuleto ya tinomboro tinhharhu yi olovanyana.

|   |  |
|---|--|
| <p>Xiphiko: <math>26 + 17 + 4</math></p> <p>Mudyondzisi: Hi nga tirha nkhakhuleto lowu hi maveketelelo lawa, kambe ndzi vona nkatsano wa tinomboro wo tirheka. Xana wu le kwihi nkatsano wa tinomboro wo tirheka?</p> <p>Vadyondzi: <math>26 + 4 = 30</math></p> <p>Mudyondzisi: 30 i nomboro yo tirheka. Kutani sweswi hi yihi nhlamulo ya <math>30 + 17</math>?</p> <p>Vadyondzi: 47</p> <p>Hloholuela vadyondzi ku tirhisa maqhigha ya ku tlula emiehlekeweni ku kuma nhlamulo. Tsundzuxa vadyondzi leswaku VA NGA hlayeli hi va1.</p> | <p><math>26 + 17 + 4</math></p> <p><math>26 + 17 + 4</math></p> <p><math>30</math></p> <p><math>26 + 17 + 4 = 30 + 17</math></p> <p><math>= 47</math></p>  |
| <p>Xiphiko: <math>69 + 47 + 3</math></p> <p>Mudyondzisi: Kuma nkatsano 'wo tirheka' eka nkhakhuleto lowu.</p> <p>Vadyondzi: <math>47 + 3 = 50</math></p> <p>Mudyondzisi: 50 i nomboro yo tirheka. Kutani sweswi hi yihi nhlamulo ya <math>69 + 50</math>?</p> <p>Vadyondzi: 119</p> <p>Hloholuela vadyondzi ku tirhisa maqhigha ya ku tlula emiehlekeweni ku kuma nhlamulo ya <math>69 + 50</math>.</p>   | <p><math>69 + 47 + 3</math></p> <p><math>69 + 47 + 3</math></p> <p><math>50</math></p> <p><math>69 + 47 + 3 = 69 + 50</math></p> <p><math>= 119</math></p> |

|  |  |
|--|--|
| Tsundzuxa vadyondzi leswaku VA NGA hlayeli hi va1. |  |
|--|--|

### **Micingiriko yo tirhiwa hi vadyondzi ha un'weun'we**

Sweswi vadyondzi va fanele va ringeta ku tirhisa nkatsano wa tinomboro wo tirheka laha ku ga na ku veketela hi vuntshwa ku hlamula swivutiso leswi swi landzelaka:

$$25 + 18 + 5$$

$$44 + 38 + 12$$

$$3 + 65 + 27$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. "eka  $25 + 18 + 5$ , ndzi sungula ndzi hlamganisa 5 eka  $25$  ku kuma  $30$ , kutani ndzi hlanganisa  $18$  eka  $30$  ku kuma  $48$ ."

Byela vadyondzi leswaku VA NGA hlayeli hi va1.

### **Vhidiyo yo Seketela**

Ku Veketela hi Vuntshwa 3



<https://youtu.be/SdnTj8PZX-o>

**Vhidiyo yo Seketela**

Ku Veketela hi Vuntshwa 4



[https://youtu.be/F\\_1UiS4QAQ4](https://youtu.be/F_1UiS4QAQ4)

**KU VEKETELA HI VUNTSHWA: XISUNGULA DYONDZO XA 4****Xitoloveto xa Menthele xa Minete yi1**

Ndza vula/wa vula: Endla 30/Endla 50

**Nongonoko wa Ngħingiriko**

Eka dyondzo leyi hititoloveta ku kuma minkatsano ya tinomboro yo tirheka eka minkakhuleto.

|  |  |
|--|--|
| <p>Xiphiq: <math>15 + 47 + 5</math><br/>         Mudyondzisi: Namunilha hi ya langutisa yinw'ana minkatsano ya tinomboro yo tirheka. Xana ku na nkatsano wa tinomboro wo tirheka eka nkhakhuleto lowu nga exitsalelweni ke?<br/>         Vadyondzi: Ina, <math>15 + 5 = 20</math>.<br/>         Mudyondzisi: Kutani <math>20 + 47 = \text{nhlamulo yihi?}</math><br/>         Vadyondzi: 67</p>              | $  \begin{array}{r}  15 + 47 + 5 \\  \swarrow \quad \searrow \\  20 \\  15 + 47 + 5 = 20 + 47 \\  = 67  \end{array}  $                                   |
| <p>Problem: <math>38 + 27 + 12</math><br/>         Mudyondzisi: Kuma nkatsano wa tinomboro wo tirheka.<br/>         Vadyondzi: <math>38 + 12 = 50</math>.<br/>         Mudyondzisi: Kutani <math>50 + 27 = \text{nhlamulo yihi?}</math><br/>         Vadyondzi: 77</p>   | $  \begin{array}{r}  38 + 27 + 12 \\  \swarrow \quad \searrow \\  50 \\  38 + 27 + 12 = 50 + 27 \\  = 77  \end{array}  $                                 |
| <p>Mudyondzisi: Hi tihi tinomboro leti nga mghenisiwaka ebokisini ku endla nkatsano wa tinomboro wo tirheka?<br/>         Vadyondzi va fanele va vula tinomboro leti helaka hi 2 leswaku ti ta katsiwa na 38 ku endla nomboro yo tirheka, xik. 2, 32, 82 na tin'wana. Va nga tlhela va vula tinomboro leti helaka hi 3 leswaku ti katsiwa na 27 ku endla nomboro yo tirheka, xik. 3, 13, 53 na tin'wana.</p> | $  \begin{array}{ll}  38 + 27 + \square & \\  38 + 27 + \boxed{32} & 38 + 27 + \boxed{13} \\  38 + 27 + \boxed{2} & 38 + 27 + \boxed{53}  \end{array}  $ |

**Migingiriko yo tirhiwa hi vadyondzi ha un'weun'we**

Sweswi vadyondzi va fanele va tsala tinomboro ta ntlhanu to hambana leti nga mghenisiwaka eka rin'wana na rin'wana ra mabokisi ku endla nkatsano wa tinomboro wo tirheka.

$$24 + 49 + \square \quad 33 + \square + 29$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik.“eka  $24 + 49$ , ndzi nga tsala nomboro leyi helaka hi 1 leswaku yi ta katsiwa na 49 kumbe ndzi nga tsala nomboro leyi helaka hi 6 leswaku yi ta katsiwa na 24.”

**Nghingiriko wo famba na wona ekaya: Phepha ro tirhela ra 1**

Emakumu ka dyondzo ya namuntilha nyika vadyondzi Phepha ro tirhela ra 1.

A wu fanelanga ku pimela vadyondzi nkarhi loko va ri karhi va tirha eka phepha leri. Xikongomelo i ku nyika vadyondzi nkarhi lesawku va titoloveta hi migingiriko yo tsala ya leswi va swi endleke emiehlekeweni.

|  |  |                      |       |  |    |  |  |
|--|--|----------------------|-------|--|----|--|--|
| Vito:  |  |                      |       |  |    |  |  |
| <b>Ku Veketela hi Vuntshwa: Phepha Ro Tirhela Ra 1</b>   |  |                      |       |  |    |  |  |
| 1. Tsondzela tinomboro timbirhi leti hlanganisiwaka<br>ku nyika 10.<br><br>8    6    2    7    5   | 11. $100 + 57 =$ <input type="text"/>  |                      |       |  |    |  |  |
| 2. Tsondzela tinomboro timbirhi leti hlanganisiwaka<br>ku nyika 10.<br><br>7    5    4    6    9   | 12. $2 \times 6 =$ <input type="text"/>  |                      |       |  |    |  |  |
| 3. $8 +$ <input type="text"/> $= 10$   | 13. Tsondzela tinomboro timbirhi leti<br>hlanganisiwaka ku nyika 30.<br>9    16    21    7    12 |                      |       |  |    |  |  |
| 4. $7 + 13 =$ <input type="text"/>   | 14. Tsondzela tinomboro timbirhi leti<br>hlanganisiwaka ku nyika 30.<br>17    5    13    8    12 |                      |       |  |    |  |  |
| 5. Tsondzela tinomboro timbirhi leti hlanganisiwaka<br>ku nyika 100.<br><br>36    59    64    45    73   | 15. $60 \times 2 =$ <input type="text"/>   |                      |       |  |    |  |  |
| 6. Tsondzela tinomboro timbirhi leti hlanganisiwaka<br>ku nyika 100.<br><br>45    87    37    55    62   | 16. $120 +$ <input type="text"/> $= 128$   |                      |       |  |    |  |  |
| 7. $20 = 8 +$ <input type="text"/>   | 17. Tsondzela tinomboro timbirhi leti<br>hlanganisiwaka ku nyika 20.<br>11    14    6    7    19 |                      |       |  |    |  |  |
| 8. <input type="text"/> $+ 6 = 20$   | 18. Tsondzela tinomboro timbirhi leti<br>hlanganisiwaka ku nyika 20.<br>15    12    8    4    11 |                      |       |  |    |  |  |
| 9. <table border="1" style="width: 100%;"><tr><td style="width: 50%;">34</td><td style="width: 50%;"><input type="text"/></td></tr><tr><td colspan="2"><hr/></td></tr><tr><td colspan="2">40</td></tr></table> | 34   | <input type="text"/> | <hr/> |  | 40 |  | 19. $\begin{array}{r} + \\ \hline 87 \end{array}$<br><br>$87 +$ <input type="text"/> $= 100$ |
| 34   | <input type="text"/>   |                      |       |  |    |  |  |
| <hr/>  |  |                      |       |  |    |  |  |
| 40   |  |                      |       |  |    |  |  |
| 10. $26 + 12 =$ <input type="text"/>   | 20. $24 + 16 =$ <input type="text"/>   |                      |       |  |    |  |  |

### Tinotsi ta Mudyondzisi

Laha u nga endla tinotsi hi dyondzo na ku kombisa leswaku i vadyondzi vahi lava va ha lavaka ku pfuniwa hi maqhingha yo hambarahambana.

Nakambe u nga endla tinotsi ta timhaka tin'wana na tin'wana leti u lavaka ku ti langutisa eka xisungula dyondzo lexi landzelaka

**Vhidiyo yo Seketela**  
Ku Veketela hi Vuntshwa 5



<https://youtu.be/dz79xkmVQy8>

**KU VEKETELA HI VUNTSHWA: XISUNGULA DYONDZO XA 5****Xitoloveto xa Menthele xa Minete yi1**

Kuma nkatsano wa tinomboro wo tirheka

Mudyondzis u tsala exitsalelwani:

23    2    8    25    36    17    21    19    44

Mudyondzisi u vula nomboro yin'wana na yin'wana, xik. 13, kutani vadyondzi va fanele va hlawula yin'wana nomboro eka leti nga exitsalelwanileyi nga ta endla nomboro yo tirheka loko yi hlanganisiwa na yin'wana, xik. 17 yi nga endla nomboro yo tirheka 30 loko yi hlanganisiwa na 13.

**Nongonoko wa Nghingiriko**

Eka dyondzo leyi hi kuma minkatsano ya tinomboro yo tirheka loko hi hlanganisa tinomboro to tala.

|  |  |
|--|--|
| <p>Xiphiko: <math>7 + 5 + 3 + 1 + 8 + 5 + 2</math></p> <p>Mudyondzisi: Kuma minkatsano ya tinomboro yo tirheka</p> <p>Vadyondzi: <math>7 + 3 = 10; 5 + 5 = 10; 8 + 2 = 10</math></p> <p>Kombisa minkatsano exitsalelwani loko vadyondzi va ri karhi va yi vula.</p> <p>Mudyondzisi: Kutani <math>7 + 5 + 3 + 1 + 8 + 5 + 2</math> is <math>10 + 10 + 1</math> leyi yi nga 31.</p>            | <p><math>7 + 5 + 3 + 1 + 8 + 5 + 2</math></p> <p>=31</p>   |
| <p>Xiphiko: <math>18 + 4 + 3 + 2 + 17 + 6 + 9</math></p> <p>Mudyondzisi: Kuma minkatsano ya tinomboro yo tirheka?</p> <p>Vadyondzi: <math>18 + 2 = 20; 4 + 6 = 10; 3 + 17 = 20</math></p> <p>Kombisa minkatsano exitsalelwani loko vadyondzi va ri karhi va yi vula.</p> <p>Mudyondzisi: Kutani <math>18 + 4 + 3 + 2 + 17 + 6 + 9</math> is <math>20 + 20 + 10 + 9</math> leyi yi nga 59</p> | <p><math>18 + 4 + 3 + 2 + 17 + 6 + 9</math></p> <p>=59</p> |

**Mgingiriko yo tirhiwa hi vadyondzi ha un'weun'we**

Sweswi vadyondzi va fanele va tirhiswa nkatsano wa tinomboro wo tirheka emiehlekeweni laha ku ga na ku veketela hi vuntshwa ku hlamula swivutiso leswi swi landzelaka:

$$6 + 3 + 2 + 4 + 9 + 8 \quad 27 + 32 + 16 + 3 + 8$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. "eka xikombiso xo sungula, ndzi hlanganisa 6 eka 4 ku kuma 10, kutani ndzi hlanganisa 2 eka 8 ku kuma 10, ndzi tlhela ndzi hlanganisa 3 na 9 ku kuma 12 na 10 yi hlanganisiwa na 10 yi hlanganisiwa na 12 i 32."

Byela vadyondzi leswaku VA NGA hlayeli hi va1.

**KU VEKETELA HI VUNTSHWA: XISUNGULA DYONDZO XA 6****Xitoloveto xa Menthele xa Minete yi1**

Pop-Fizz: Andzisa hi 5

Mudyondzisi u vula a ku ‘pop’ kutani vadyondzi va ku ‘fizz’; kutani mudyondzisi a vula nomboro, kutani vadyondzi va hlamula hi ku vula nomboro leyi a yi vuriwile kambe yi andzisiwile hi 5.

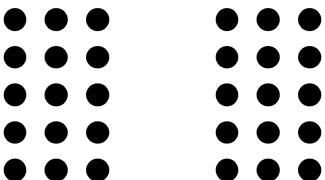
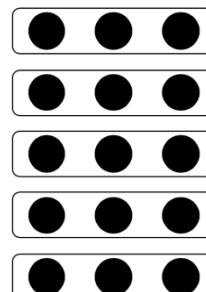
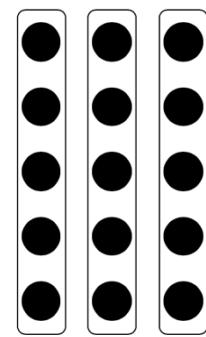
|                  |   |  |
|------------------|---|--|
| Mudyondzisi: pop | → | Vadyondzi: fizz                        |
| Mudyondzisi: 2   | → | Vadyondzi: 10                          |
| Mudyondzisi: pop | → | Vadyondzi: fizz                        |
| Mudyondzisi: 3   | → | Vadyondzi: 15                          |
| Mudyondzisi: pop | → | Vadyondzi: fizz                        |
| Mudyondzisi: 8   | → | Vadyondzi: 40                          |
| Mudyondzisi: pop | → | Vadyondzi: fizz                        |
| Mudyondzisi: 9   | → | Vadyondzi: 45      hi ndlela yaleyo... |

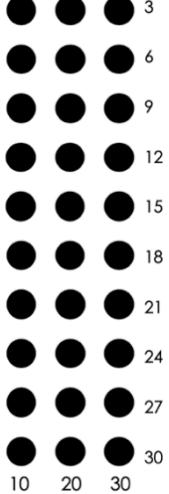
Xintlangwana lexi xi nga tlangiwa ku titoloveta miandziso ya tinomboro tiin’wana na tiin’wana. Mudyondzisi u fanele ku boxa tinomboro leti vadyondzi va faneleke ku andzisa hi tona loko xintlangwana xisungula.

**Nongonoko wa Nghingiriko**

Eka dyondzo leyi hi dyondzisa ro sungula ku veketela hi vuntshwa eka ku andzisa.

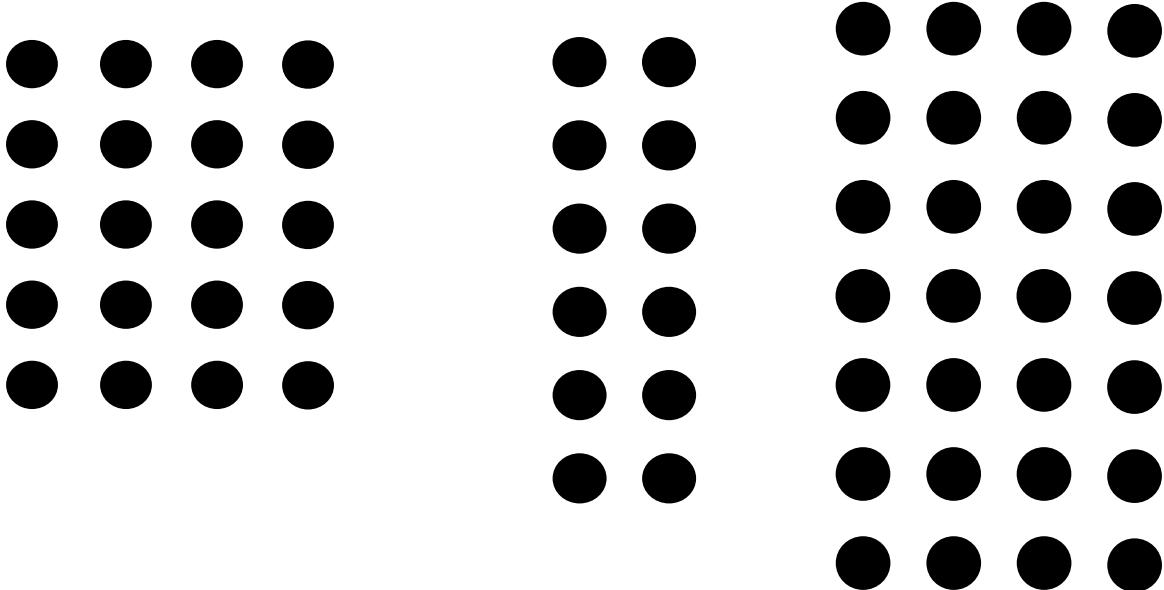
Lemuka: *Tirhowu na tikholumu ta tidoto ta kumeka eka buku ya Print Master.*

|   |   |  |
|---|---|--|
| Damarheta maphepha mambirhi lama ma nga na 5 wa tirhowu laha rhowu yin’wana na yin’wana yi nga na 3 wa tidoto exitsalelwani. Yimela vadyondzi va pfumela leswaku ta ringana.            |  | <br>$5 \times 3$ |
| Hi ku tirhisa phepha leri ro sungula, kombisa leswaku hi na va3 va 5 hi ku tsongzela rhowu yin’wana na yin’wana, u tlhela u tsala 5 x 3 exitsalelwani.                                  |   | <br>$3 \times 5$ |
| Mudyondzisi: Ha swi vona leswaku ku na 3, 6, 9, 12, 15. (kombetela rhowu yin’wana na yin’wana loko u ri karhi u hlayela)  |   |  |
| Hi ku tirhisa phepha ra vumbirhi leri ri nga na nongonoko wa va5 va 3, kombisa leswaku hi na va5 va 3 hi ku tsongzela rhowu yin’wana na yin’wana, u tlhela u tsala 3 x 5 exitsalelwani. |   |  |
| Mudyondzisi: Ha swi vona leswaku ku na 5, 10, 15 (kombetela rhowu yin’wana na yin’wana loko u ri karhi u hlayela). Kutani ha swi vona leswaku $5 \times 3 =$                            |   |  |

|   |   |   |    |    |    |    |    |    |    |    |    |    |    |
|---|---|---|----|----|----|----|----|----|----|----|----|----|----|
| <p>3 x 5. Tani hi laha hi endliseke xiswona loko hi hlanganisa hi nga cinca mavekelo eka ku andzisa.</p>  |   |   |    |    |    |    |    |    |    |    |    |    |    |
| <p>Damarheta phepha leri nga na 10 wa tirhowu laha rhowu yin'wana na yin'wana yi nga na 3 wa tidoto exitsalelweni.</p> <p>Mudyondzisi: A hi hlayeleni leswaku ku na tidoto tingani hinkwato (u ri karhi u kombetela eka tirhowu).</p> <p>Vadyondzi: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30.</p> <p>Mudyondzisi: A hi cinceni mavekelo kutani hi hlayela hi ndlela leyi (u ri karhi u kombetela eka tikholumu).</p> <p>Vadyondzi: 10, 20, 30</p> <p>Mudyondzisi: Xana a swi hatlisanyana ku hlayela hinkwato leti (u ri karhi u kombetela tinomboro hi andziso wa 3) kumbe ku hlayela hinkwato leti (u ri karhi u kombetela tinomboro hi andziso wa 10)?</p> <p>Vadyondzi va fanele va pfumela leswaku swa olovanyana swi tlhela swi hatlisanyana ku hlayela hi 10, 20, 30.</p> |  <table border="0"> <tr> <td>3</td> <td>6</td> <td>9</td> <td>12</td> <td>15</td> <td>18</td> <td>21</td> <td>24</td> <td>27</td> <td>10</td> <td>20</td> <td>30</td> </tr> </table> | 3 | 6  | 9  | 12 | 15 | 18 | 21 | 24 | 27 | 10 | 20 | 30 |
| 3   | 6   | 9 | 12 | 15 | 18 | 21 | 24 | 27 | 10 | 20 | 30 |    |    |

**Micingiriko yo tirhiwa hi vadyondzi ha un'weun'we**

Sweswi vadyondzi va fanele va tsala minkhakhuleto mimbirhi leyi nga endliwaka hi ku khakhuleta nhlato ya tidoto eka xifaniso xin'wana na xin'wana laha hansi. Vadyondzi va fanele va hlawula nkhakhuleto lowu va olovelakanyana ku wu endla. Minonganoko leyi ya tidoto yi kona eka buku ya Print Master naswona yi nga tirhisiwa exitsalelweni.

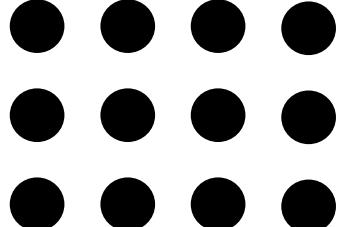


**Vhidiyo yo Seketela**

Ku Veketela hi Vuntshwa 6



<https://youtu.be/cCVo9O9ibaE>



**Vhidiyo yo Seketela**

Re-Ordering 7



<https://youtu.be/ZMaAhLcdAQo>

**KU VEKETELA HI VUNTSHWA: XISUNGULA DYONDZO XA 7****Xitoloveto xa Menthele xa Minete yi1**

Pop-Fizz: Andzisa hi 10

**Nongonoko wa Nggingiriko**

Eka dyondzo leyi hi kuma minkatsano ya tinomboro yo tirheka eka minkakhuleto ya ku andzisa hi tinomboro tinharu.

|  |  |
|--|--|
| <p>Xiphiko: <math>2 \times 7 \times 5</math></p> <p>Mudyondzisi: Hi nga tirha nkhakhuleto lowu hi ndlela leyi, kambe ndzi vona nkatsano wa tinomboro wo tirheka. Xana wu kwihi nkatsano wa tinomboro wo tirheka?</p> <p>Vadyondzi: <math>2 \times 5 = 10</math></p> <p>Mudyondzisi: 10 i nomboro yo tirheka. A hi tirhiseni swona sweswo ku tirha nkhakhuleto.</p> <p>Tsala <math>2 \times 7 \times 5 = 2 \times 5 \times 7</math> exitsalelwani.</p> <p>Mudyondzisi: Ha swi tiva leswaku <math>2 \times 5 = 10</math>. Xana hi yihi nhlamulo ya <math>10 \times 7</math>?</p> <p>Yingisela vadyondzi lava va yi tivaka nhlamulo leyi, kumbe lava va hlayelaka hi ku tlula hi va10.</p> <p>Tsundzuxa vadyondzi leswaku va NGA hlayeli hi va1.</p> <p>Vadyondzi: 70</p> | $\begin{array}{c} 2 \times 7 \times 5 \\ \swarrow \quad \searrow \\ 14 \end{array}$ $14 \times 5 = 70$ |
|--|--|

**Migingiriko yo tirhiwa hi vadyondzi ha un'weun'we**

Sweswi vadyondzi va fanele va tirhisa nkatsano wa tinomboro wo tirheka ku hlamula swivutiso leswi swi landzelaka:

$$2 \times 6 \times 5 \quad 5 \times 8 \times 2 \quad 9 \times 2 \times 5$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik. "eka  $2 \times 6 \times 5$ , ndza swi tiva leswaku 2 loko yi andzisiwa hi 5 i khume, naswona 10 loko yi andzisiwa hi 6 i 60, kutani nhlamulo i 60."

*Lemuka: Vadyondzi va nga tlhela va ta na tindlela tin'wana to tirha leswi hi ku hatlisa. Xikombiso, mudyondzisi a nga endla  $2 \times 6 \times 5$  hi ku vula leswaku  $6 \times 5 = 30$  na swona mbirihato wa 30 i 60. Na wona lowu i nkhakhuleto wa kahle swinene.*

**Nggingiriko wo famba na wona ekaya: Phepha ro tirhela ra 2**

Emakumu ka dyondzo ya namuntlha nyika vadyondzi Phepha ro tirhela ra 2

A wu fanelanga ku pimela vadyondzi nkarhi loko va ri karhi va tirha eka phepha leri. Xikongomelo i ku nyika vadyondzi nkarhi lesawku va titoloveta hi migingiriko yo tsala ya leswi va swi endleke emiehlekeweni.

Vito:

**Ku Veketela hi Vuntshwa: Phepha Ro Tirhela Ra 2**

1.  $8 + 94 =$

2.  $11 + 27 + 19 =$

3.  $99 + 198 + 2 + 1 =$

4.  $48 + 23 + 12 =$

5.  $56 + 115 + 25 =$

6.  $2 \times 9 \times 5 =$

7.  $3 \times 10 = 10 \times$

8.  $9 + 93 = 93 +$

9.  $91 + 37 + 9 = 100 +$

10.  $99 + 96 + 1 +$    $= 200$

Tsondzela tinomboro timbirhi ta kahle ngopfu leti nga hlanganisiwaka ku sungula eka

11. ntlawa lowu:

74    26    83

Tsondzela tinomboro timbirhi ta kahle ngopfu leti nga andzisiwaka ku sungula eka ntlawa

12. lowu:

2    38    5

**Tinotsi ta Mudyondzisi**

Laha u nga endla tinotsi hi dyondzo na ku kombisa leswaku i vadyondzi vahi lava va ha lavaka ku pfuniwa hi maqhingha yo hambarahambana.

Nakambe u nga endla tinotsi ta timhaka tin'wana na tin'wana leti u lavaka ku ti langutisa eka xisungula dyondzo lexi landzelaka

**Vhidiyo yo Seketela**

**Ku Veketela hi Vuntshwa 8**



<https://youtu.be/Sh0e84cPf2U>

**KU VEKETELA HI VUNTSHWA: XISUNGULA DYONDZO XA 8****Xitoloveto xa Menthele xa Minete yi1**

Pop-Fizz: Ku andzisa hi 5

Pop-Fizz: Ku andzisa hi 10

**Nongonoko wa Nghingiriko**

Eka dyondzo leyi hi kuma nkatsano wa tinomboro wo tirheka eka minkhakhuleto yo andzisa.

Xiphiko:  $4 \times 9 \times 5$

Mudyondzisi: Hi nga tirha nkakhuleto lowu hi maveketelelo lawa, kambe ndzi vona nkatsano wa tinomboro wo tirheka. Xana wu le kwihi nkatsano wa tinomboro wo tirheka?

Vadyondzi:  $4 \times 5 = 20$

Mudyondzisi: 20 i nomboro yo tirheka. A hi tirhiseni swona sweswo ku veketela nkakhuleto hi vuntshwa.

Tsala  $4 \times 9 \times 5 = 4 \times 5 \times 9$  exitsalelwani.

Mudyondzisi: Hi nga veketela hi tlhela hi tsala leswi tanahi  $4 \times 5 \times 9$ . Ha swi tiva leswaku  $4 \times 5 = 20$ . A hi tirheni  $20 \times 9$  hi ku hlayela hi va20.

Vadyondzi: 20, 40, 60, 80, 100, 120, 140, 160, 180.

$$\begin{array}{c} 4 \times 9 \times 5 \\ \swarrow \quad \searrow \\ 20 \end{array}$$

$$\begin{aligned} 4 \times 9 \times 5 &= 4 \times 5 \times 9 \\ &= 20 \times 9 \\ &= 180 \end{aligned}$$

**Mgingiriko yo tirhiwa hi vadyondzi ha un'weun'we**

Sweswi vadyondzi va fanele va tirhisa nkatsano wa tinomboro wo tirheka laha ku ga na ku veketela hi vuntshwa ku hlamula swivutiso leswi swi landzelaka:

$$4 \times 3 \times 5 \quad 4 \times 6 \times 5 \quad 5 \times 7 \times 4$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik “eka  $4 \times 3 \times 5$ , ndza swi tiva leswaku 4 yi andzisiwa hi 5 i makumembirhi, naswona 20 yi andzisiwa hi 3 i 60, kutani nhlamulo i 60.”

*Lemuka: Vadyondzi va nga tlhela va ta na tindlela tin'wana to tirha leswi hi ku hatlisa. Xikombiso, mudyondzi a nga endla  $4 \times 3 \times 5$  hi ku vula leswaku  $4 \times 3 = 12$  naswona  $12 \times 5 = 60$ . Na wona lowu i nkakhuleto wa kahle swinene.*

Vito:

**Ku Veketela hi Vuntshwa: Xikambelwana Emakumu ka Dyondzo****XIYENGE XA 1**

Timinete ti2 eka papila leri

|   |   |  |  |  |    |  |   |
|---|---|--|--|--|----|--|---|
| 1. Tsondzela tinomboro timbirhi leti hlanganisiwaka<br>ku nyika 10.<br>7 4 2 3 9  | 11. $100 + 32 =$ <input type="text"/>   |  |  |  |    |  |   |
| 2. Tsondzela tinomboro timbirhi leti hlanganisiwaka<br>ku nyika 10.<br>5 4 1 6 8  | 12. $2 \times 5 =$ <input type="text"/>   |  |  |  |    |  |   |
| 3. $7 +$ <input type="text"/> $= 10$  | 13. Tsondzela tinomboro timbirhi leti hlanganisiwaka<br>ku nyika 20.<br>8 14 12 3 19  |  |  |  |    |  |   |
| 4. $9 + 11 =$ <input type="text"/>  | 14. Tsondzela tinomboro timbirhi leti hlanganisiwaka<br>ku nyika 20.<br>15 4 1 16 8   |  |  |  |    |  |   |
| 5. Tsondzela tinomboro timbirhi leti hlanganisiwaka<br>ku nyika 100.<br>24 50 30 38 70  | 15. $50 \times 2 =$ <input type="text"/>  |  |  |  |    |  |   |
| 6. Tsondzela tinomboro timbirhi leti hlanganisiwaka<br>ku nyika 100.<br>51 17 29 49 60  | 16. $140 +$ <input type="text"/> $= 149$  |  |  |  |    |  |   |
| 7. $20 = 8 +$ <input type="text"/>  | 17. Tsondzela tinomboro timbirhi leti hlanganisiwaka<br>ku nyika 30.<br>18 14 12 7 19 |  |  |  |    |  |   |
| 8. <input type="text"/> $+ 3 = 20$  | 18. Tsondzela tinomboro timbirhi leti hlanganisiwaka<br>ku nyika 30.<br>10 14 9 16 13 |  |  |  |    |  |   |
| 9. <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="padding: 5px;">21</td><td style="padding: 5px;"></td></tr><tr><td colspan="2" style="height: 20px;"></td></tr><tr><td colspan="2" style="padding: 5px;">30</td></tr></table> | 21  |  |  |  | 30 |  | 19. $\begin{array}{r} \\ + \end{array}$ <input type="text"/><br>$69$<br>$69 +$ <input type="text"/> $= 100$ |
| 21  |   |  |  |  |    |  |   |
|   |   |  |  |  |    |  |   |
| 30  |   |  |  |  |    |  |   |
| 10. $56 + 30 =$ <input type="text"/>  | 20. $22 + 18 =$ <input type="text"/>  |  |  |  |    |  |   |
| <b>Ntsengo 20</b>   |   |  |  |  |    |  |   |

**Ku Veketela hi Vuntshwa: Xikambelwana Emakumu ka Dyondzo**

XIYENGE XA 2

Timinete ti3 eka papila leri

1.  $8 + 97 = \boxed{\phantom{00}}$

2.  $27 + 48 + 23 = \boxed{\phantom{00}}$

3.  $199 + 98 + 1 + 2 = \boxed{\phantom{00}}$

4.  $37 + 56 + 13 = \boxed{\phantom{00}}$

5.  $38 + 125 + 15 = \boxed{\phantom{00}}$

6.  $2 \times 7 \times 5 = \boxed{\phantom{00}}$

7.  $8 + 97 = 97 + \boxed{\phantom{00}}$

8.  $96 + 58 + 4 = 100 + \boxed{\phantom{00}}$

9.  $99 + 97 + 1 + \boxed{\phantom{00}} = 200$

Tsondzela tinomboro timbirhi ta kahle ngopfu leti nga hlanganisiwaka ku sungula eka  
ntlawa lowu:

43    36    14

**Ntsengo 10**

## **KU YELANISA KU HLANGANISA NA KU SUSA**

### **Manghenelo**

Nkongomiso eka swisungula dyondzo wu le ka vuxaka exikarhi ka ku hlanganisa na ku susa. Hi tirhisu vuxaka lebyi ku cinca minkhakhuleto ku suka eka ku hlanganisa ku ya eka ku susa, na ku suka eka ku susa ku ya eka ku hlanganisa, tanihi qhingha ra ku khakhuleta. Leswi swi katsa ku twisia vuxaka exikarhi ka tioparexini letimbirhi na ku twisia vuxaka exikarhi ka tinomboro eka swivulwa swa tinomboro swa ku hlanganisa na ku susa. Yin'wana ya mintirho yi fanele ku rhangeriwa hi mudyondzisi exitsalelweni kasi yin'wana i ya leswaku vadyondzi va tiendlela va ri vox.

### **Vuswikoti byo Tsundzuka hi ku Hatlisa**

Ku na vuswikoti byo tsundzuka hi ku hatlisa byi nharhu lebyi vadyondzi va faneleke ku dyondza vuxaka exikarhi ka ku hlanganisa na ku susa tanihi qhingha ra ku khakhuleta:

- ku hlanganisa tinomboro ta dijiti yin'we eka tinomboro ta tidijiti timbirhi, ku katsa na ku tlula ku ya eka vukhume (xik. 28 + 4; 39 + 2)
- ku susa tinomboro ta dijiti yin'we eka tinomboro ta tidijiti timbirhi, ku katsa na ku tlula ku ya eka vukhume (xik. 33 – 5; 52 – 4)
- ku tirha hi ku titshembha na ku olova hi tidayagiramu ta bara ku kuma nkhakhuleto wa vuxaka lowu swi olovaka ku wu tirha.

Vito:

**Ku Yelanisa ku Hlanganisa na ku Susa: Xikambelwana ku nga si sungula Dyondzo**

XIYENGE XA 1

Timinete ti2 eka papila leri

1.  $88 + \boxed{\quad} = 92$

Tsala 15, 5 na 20 eka swivulwa swa tinomboro laha hansi (11 - 14).

|    |   |
|----|---|
| 15 | 5 |
| 20 |   |

2.  $42 - 4 = \boxed{\quad}$

11.  $\boxed{\quad} - 5 = \boxed{\quad}$

3.  $86 + 5 = \boxed{\quad}$

12.  $\boxed{\quad} + 5 = \boxed{\quad}$

4.  $17 + \boxed{\quad} = 23$

13.  $\boxed{\quad} - \boxed{\quad} = 5$

5.  $199 + \boxed{\quad} = 201$

14.  $5 + \boxed{\quad} = \boxed{\quad}$

Tsala tinomboro letinhарhu eka mabokisi  
lama nga wona:  $11 - 9 = 2$ .

15.  $99 + \boxed{\quad} = 102$

6.  $\boxed{\quad} \quad \boxed{\quad}$

16.  $21 - \boxed{\quad} = 19$

7.  $\boxed{\quad}$

17.  $37 + 6 = \boxed{\quad}$

8.  $302 - 5 = \boxed{\quad}$

18.  $47 + \boxed{\quad} = 55$

9.  $29 + \boxed{\quad} = 34$

19.  $34 - \boxed{\quad} = 29$

10.  $91 - \boxed{\quad} = 89$

20.  $75 + \boxed{\quad} = 82$

**Ntsengo 20**

**Ku Yelanisa ku Hlanganisa na ku Susa: Xikambelwana ku nga si sungula Dyondzo**

| XIYENGE XA 2  | Timinete ti2 eka papila leri |    |     |  |  |
|---|------------------------------|----|-----|--|--|
| 1. $92 - 88 =$ <input type="text"/>   |                              |    |     |  |  |
| 2. $4 +$ <input type="text"/> $= 402$   |                              |    |     |  |  |
| 3. <input type="text"/> $- 82 = 5$  |                              |    |     |  |  |
| 4. $82 - 75 =$ <input type="text"/>   |                              |    |     |  |  |
| 5. $201 - 199 =$ <input type="text"/>   |                              |    |     |  |  |
| 6. <table border="1"><tr><td><input type="text"/></td><td>99</td></tr><tr><td colspan="2">102</td></tr></table> | <input type="text"/>         | 99 | 102 |  |  |
| <input type="text"/>  | 99                           |    |     |  |  |
| 102   |                              |    |     |  |  |
| 27 + 15 = 42  | 42 + 15 = 57                 |    |     |  |  |
| 7. $42 - 15 =$ <input type="text"/>   |                              |    |     |  |  |
| 24 + 18 = 42  | 24 + 42 = 66                 |    |     |  |  |
| 8. <input type="text"/> + 24 = 42   |                              |    |     |  |  |
| Tirhisa tinomboro tinarhu leti nga laha hansi eka minkakhuleto ya ku susa mimbirhi yo hambana:                  |                              |    |     |  |  |
| $83 + 37 = 120$   |                              |    |     |  |  |
| 9. <input type="text"/> - <input type="text"/> = <input type="text"/>   |                              |    |     |  |  |
| 10. <input type="text"/> - <input type="text"/> = <input type="text"/>  |                              |    |     |  |  |
| na  |                              |    |     |  |  |

## KU YELANISA KU HLANGANISA NA SUSA: XISUNGULA DYONDZO XA 1

### Xitoloveto xa Menthele xa Minete yi1

Ku hlanganisa hi ku hatlisa: tinomboro ta dijiti yi1 na tinomboro ta tidijiti ti2

Hlawula nomboro ta tidijiti ti2 kutani u kombela leswaku yi hlanganisiwa na nomboro yo hambana ya dijiti yi1.

|                       |  |
|-----------------------|--|
| Mudyondzisi: 29 + 4 → | Vadyondzi: 33                          |
| Mudyondzisi: 29 + 2 → | Vadyondzi: 31                          |
| Mudyondzisi: 29 + 5 → | Vadyondzi: 34                          |
| Mudyondzisi: 29 + 7 → | Vadyondzi: 36      hi ndlela yaleyo... |

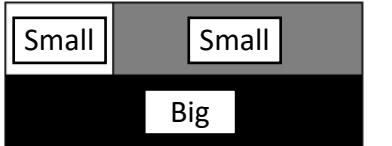
|                       |   |
|-----------------------|---|
| Mudyondzisi: 37 + 5 → | Vadyondzi: 42                           |
| Mudyondzisi: 37 + 9 → | Vadyondzi: 46                           |
| Mudyondzisi: 37 + 6 → | Vadyondzi: 43                           |
| Mudyondzisi: 37 + 3 → | Vadyondzi: 40      hi ndlela yaleyo ... |

*Lemuka: Vadyondzi va nga hlayela ku ya ehenhla kumbe ehansi hi ku hatlisa loko va hlanganisa kumbe ku susa 2, 3, kumbe 4, kambe va fanele va hloholeteriwa ku tirhisa qhingha ra ku tlula ku ya eka khume loko va hlanganisa kumbe ku susa 5, 6, 7, 8, na 9 hi ku tirhisa ndzhati wa mintsengo ya le miehlekeweni.*

### Nongonoko wa Ngchingiriko

Eka dyondzo leyi hi tirhisa tidayagiramu ta bara ku yelanisa ku hlanganisa na ku susa.

*Lemuka: Dayagiramu ya bara ya ntima, wasi na ku basa yi kumeka eka buku ya Print Master.*

|   |  |
|---|--|
| <p>Mudyondzisi: Eka nkatsano wa dayagiramu ya bara, tibara timbirhi letintsongo loko ti katsiwile ti ringana na leyikulu. Loko hi langutisa vukulu bya tibara leti hlovohatiweke ku hambana (wo basa, wa wasi na wa ntima) ha swi vona leswaku vulehi bya tibara ti2 letintsongo loko ti hlanganisiwile ti ringana na ku leha ka bara leyikulu.</p> <p>Mudyondzisi: Bara leyikulu eka hinkwato (yo basa) hi yi vitana 'Yikulu' (damarheta rito 'Yikulu' eka bara ya ntima), naswona hi vitana yi'wana na yin'wana ya letimbirhi letintsongonyana 'Yintsongo' (damarheta mavito 'Yintsongo' eka tibara letintsongonyana).</p> <p>Mudyondzisi: Ku leha ka 'Yikulu swi ringana na Yintsongo yi hlanganisiwa na Yintsongo' Tsala nkhakhuleto exitsalelwani.</p> | <p>Damarheta dayagiramu ya bara leyi nga laha hansi exitsalelwani u tlhela u damarheta mavito (Yikulu, Yintsongo, Yintsongo) ehansi ka dayagiramu.</p>  <p>Big      Small      Small</p>  <p>Small      Small      Big</p> <p>Yikulu = Yintsongo + Yintsongo</p> |
|---|--|

|  |  |
|--|--|
| <p>Mudyondzisi: Ndzi nyike swin'wana swivulwa swa ku hlanganisa na ku susa swa dayagiramu ya bara</p> <p>Vadyondzi: Yikulu – Yintsongo = Yintsongo, na swin'wana.</p> <p>Tsala hi xin'we xin'we xa leswi vadyondzi va swi vulaka, u ri karhi u kombela tlilasi hinkwayo ku amukela kumbe ku kaneta leswi vuriwaka (ku fanele ku van a tinhlamuselo).</p> <p>Mudyondzisi: Hi swihi leswi mi nga swi vulaka hi 'Yintsongo – Yikulu = Yintsongo'? (Swi tsale)</p> <p>Vadyondzi va vula loko xivulwa lexiya xi ri ntiyiso kumbe ku ri mavunwa. Kombela vadyondzi ku nyika tinhlamuselo.</p> <p>Dirowa ntila ehenhla ka swivulwa leswi tlilasi yi nga pfumelelana leswaku i mavunwa (kumbe swi hoxekile). Tsala 'i mavunwa' etlhelo ka swona.</p> <p>Endla swo fana hi 'Yintsongo + Yikulu = Yintsongo'</p> | <p>Yikulu – Yintsongo = Yintsongo<br/>Yintsongo + Yintsongo = Yikulu</p> <p>Small – Big = Small?</p> <p><del>Yintsongo – Yikulu = Yintsongo<br/>i mavunwa</del></p> <p><del>Yintsongo + Yikulu = Yintsongo<br/>i mavunwa</del></p> |
|--|--|

### Mgingiriko yo tirhiwa hi vadyondzi ha un'weun'we

Sweswi vadyondzi va fanele va ringeta nghingiriko wo tirhiwa hi vadyondzi ha un'weun'we lowu nga lulamiseriwa Xisungula Dyondzo xa 1.

**Vhidiyo yo Seketela**

Ku Yelanisa ku Hlanganisa na ku Susa 1



<https://youtu.be/nha592FZEAc>

**Ku Yelanisa ku Hlanganisa na ku Susa Xisungula Dyondzo xa 1: Nghingiriko wo Tirhiwa hi Vadyondzi ha un'weun'we**

Tsala marito Yikulu, Yintsongo na Yintsongo etlhelo ka tibara leti nga ton a eka dayagiramu leyi nga laha hansi:

|   |   |
|---|---|
| 3 | 6 |
| 9 |   |

Gwajula (✓) etlhelo ka swivulwa swa tinomboro leswi swi nga ntiyiso/swona, na xihambano etlhelo ka swivulwa swa tinomboro leswi swi nga mavunwa/ri ki swona (✗):

$$\begin{array}{ll} 3 + 6 = 9 & 6 - 3 = 9 \\ 9 = 6 + 3 & 9 - 3 = 6 \\ 6 + 9 = 3 & 3 = 9 - 6 \\ 6 + 3 = 9 & 9 - 6 = 3 \\ 3 + 9 = 6 & 3 - 6 = 9 \end{array}$$

## KU YELANISA KU HLANGANISA NA KU SUSA: XISUNGULA DYONDZO XA 2

### Xitoloveto xa Menthele xa Minete yi1

Ku susa hi ku hatlisa: tinomboro ta dijiti yi1 ku suka eka tinomboro ta tidijiti ti2

Hlawula nomboro ya tidijiti ti2 kutani u kombela vadyondzi leswaku va susa tinomboro to hambanahambana ta dijiti yi1 eka yona.

|                       |               |                      |
|-----------------------|---------------|----------------------|
| Mudyondzisi: 71 – 1 → | Vadyondzi: 70 |                      |
| Mudyondzisi: 71 – 3 → | Vadyondzi: 68 |                      |
| Mudyondzisi: 71 – 5 → | Vadyondzi: 66 |                      |
| Mudyondzisi: 71 – 7 → | Vadyondzi: 64 | hi ndlela yaleyo...  |
| Mudyondzisi: 42 – 2 → | Vadyondzi: 40 |                      |
| Mudyondzisi: 42 – 4 → | Vadyondzi: 38 |                      |
| Mudyondzisi: 42 – 6 → | Vadyondzi: 36 |                      |
| Mudyondzisi: 42 – 9 → | Vadyondzi: 33 | hi ndlela yaleyo ... |

### Nongonoko wa Nghingiriko

Eka dyondzo leyi hi komba vuxaka eka ku susa na ku hlanganisa exikarhi ka tinomboro leti ti nga eka ndyangu wun'we.

|  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|
| Mudyondzisi: Xana u nga ehleketa hi laha tinomboro 4, 6 na 10 ti nga yelanisiwaka ha kona ke?  | Tsala 4, 6 na 10 exitsalelwani.<br>4      6      10<br>mune na tsevu ti endla khume<br>khume ku susiwa tsevu swi ringana na mune<br>$4 + 6 = 10$<br>$6 + 4 = 10$<br>$10 - 6 = 4$<br>$10 - 4 = 6$ |  |  |  |  |  |  |
| Vadyondzi va nga vula vuxaka 'mune na tsevu i khume', kumbe 'loko hi teka mune eka khume hi kuma tsevu', kumbe ' $4 + 6 = 10$ ' kumbe ' $10 - 4 = 6$ '.<br><br>Tsala hi xin'we xin'we xa leswi vadyondzi va swi vulaka, u ri karhi u kombela ttiliasi hinkwayo ku amukela kumbe ku kaneta leswi vuriwaka (ku fanele ku van a tinhlamuselo).<br><br>Sula tinhlamulo leti nga ri ki tona.<br><br>Mudyondzisi: Tinomboro 4, 6 na 10 ti na vuxaka loko hi hlanganisa na loko hi susa. Ti nga ehleketeriwa leswaku i <b>ndyangu wa tinomboro</b> . Eka dayagiramu ya bara ya ndyangu wa tinomboro, tinomboro letintsongo timbirhi loko ti katsiwile ti ringana na leyikulu. Laha, ku leha ka $4 + 6$ (letintsongo timbirhi endyanwini) swi ringana na ku leha ka $10$ (leyikulu endyangwini).<br><br>Dirowa dayagiramu ya bara. | Tsala 8, 3 na 5 exitsalelwani.<br>8      3      5<br><table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>                                 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

| <p>Mudyondzisi: Tinomboro tin'wana tinharhu leti nga na vuxaka loko hi ti hlanganisa kumbe ku susa i 8, 3 na 5.</p> <p>Tinomboro leti na tona i <b>ndyangu wa tinomboro</b>. Hi yihi ndlela leyi tinomboro leti ti nga yelanisiwaka ha kona eka dayagiramu ya bara?</p> <p>Dirowa dayagiramu ya bara yo pfumala nchumu hilaha swi kombisiweke ha kona.</p> <p>Vadyondzi va vula vuxaka exikarhi ka 8, 3 na 5 va tlhela va vula laha nomboro yin'wana na yin'wana yi faneleke ku va kona eka dayagiramu ya bara.</p> <p>Tsala leswi vadyondzi va nga ta swi boxa ku fana na le ku sunguleni. Tsala tinhlamulo leti amukelekaka exitsalelwani eka tikholumu timbirhi. U nga pfuna vadyondzi hi ti2 leto hetelela eka kholomu yin'wana na yin'wana hi ku tirhisa matsalelo lama yo fana na:</p> <p><math>8 = \square + \square</math>; <math>3 = \square - \square</math>; <math>5 = \square - \square</math></p> <p>Mudyondzisi: Eka ndyangu wa tinomboro wun'wana na wun'wana hi nga endla swivulwa swa tinomboro swa 4 swo hlanganisa na 4 swo susa. A hi tlheleleni eka xikombiso xa hina lexo sungula hi ya kamba loko hi nga siyangi swin'wana.</p> <p>Tsala swivulwa swa tinomboro swa 8, 3 na 5 leswi a swi siywile.</p> | <table border="1"> <thead> <tr> <th>+ minkhakhuleto</th> <th>- minkhakhuleto</th> </tr> </thead> <tbody> <tr> <td><math>5 + 3 = 8</math></td> <td><math>8 - 3 = 5</math></td> </tr> <tr> <td><math>3 + 5 = 8</math></td> <td><math>8 - 5 = 3</math></td> </tr> <tr> <td><math>8 = 5 + 3</math></td> <td><math>5 = 8 - 3</math></td> </tr> <tr> <td><math>8 = 3 + 5</math></td> <td><math>3 = 8 - 5</math></td> </tr> </tbody> </table> | + minkhakhuleto | - minkhakhuleto | $5 + 3 = 8$ | $8 - 3 = 5$ | $3 + 5 = 8$ | $8 - 5 = 3$ | $8 = 5 + 3$ | $5 = 8 - 3$ | $8 = 3 + 5$ | $3 = 8 - 5$ |
|---|---|-----------------|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| + minkhakhuleto   | - minkhakhuleto   |                 |                 |             |             |             |             |             |             |             |             |
| $5 + 3 = 8$   | $8 - 3 = 5$   |                 |                 |             |             |             |             |             |             |             |             |
| $3 + 5 = 8$   | $8 - 5 = 3$   |                 |                 |             |             |             |             |             |             |             |             |
| $8 = 5 + 3$   | $5 = 8 - 3$   |                 |                 |             |             |             |             |             |             |             |             |
| $8 = 3 + 5$   | $3 = 8 - 5$   |                 |                 |             |             |             |             |             |             |             |             |

### Mgingiriko yo tirhiwa hi vadyondzi ha un'weun'we

Mudyondzi un'wana na un'wana u fanele a tirha na munghana laha va nga ta dirowa dayagiramu ya bara ya ndyangu wa tinomboro ta 7, 9 na 16. Endzhaku ka swona va fanele va tsala 4 wa minkhakhuleto ya ku hlanganisa na 4 ya ku susa ya ndyangu wa tinomboro

Fambafamba u ri karhi u vona leswi va tirhisaka swona u ri karhi u va pfuna laha swi nga fanela.

**Vhidiyo yo Seketela**

Ku Yelanisa ku Hlanganisa & ku Susa 2



<https://youtu.be/fKPfCfF0w1I>

## KU YELANISA KU HLANGANISA NA KU SUSA: XISUNGULA DYONDZO XA 3

### Xitoloveto xa Menthele xa Minete yi1

- a. Ku hlanganisa hi ku hatlisa: tinomboro ta dijiti yi1 na tinomboro ta tidijiti ti2
- b. Ku susa hi ku hatlisa: tinomboro ta dijiti yi1 ku suka eka tinomboro ta tidijiti ti2

### Nongonoko wa Nghingiriko

Eka dyondzo leyi hi titoloveta ku yelanisa ku hlanganisa na ku susa hi ku tirhisa tdayagiramu ta bara.

|   |   |    |   |    |  |  |  |  |  |  |   |   |                   |                   |               |               |               |               |               |               |               |               |
|---|---|----|---|----|--|--|--|--|--|--|---|---|-------------------|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| <p>Mudyondzisi: Tinomboro 17, 5 na 22 ti na vuxaka loko hi hlanganisa na loko hi susa. Tinomboro let ii ndyangu wa tinomboro.</p> <p>Dirowa dayagiramu ya bara yo pfumala nchumu hilaha swi kombisiweke ha kona.</p> <p>.</p> <p>Vadyondzi va vula vuxaka exikarhi ka 17, 5 na 22 va tlhela va vula laha nomboro yin'wana na yin'wana yi faneleke ku va kona eka dayagiramu ya bara.</p> <p>Tsala leswi vadyondzi va nga ta swi boxa ku fana na le ku sunguleni. Tsala tinhlamulo leti amukelekaka exitsalelwani eka tikholumu timbirhi. U nga pfuna vadyondzi hi ti2 leto hetelela eka kholomu yin'wana na yin'wana hi ku tirhisa matsalelo lama yo fana na:</p> <p><math>22 = \square + \square</math>; <math>5 = \square - \square</math>; <math>17 = \square - \square</math></p> <p>Mudyondzisi: Eka ndyangu wa tinomboro wun'wana na wun'wana hi nga endla swivulwa swa tinomboro swa 4 swo hlanganisa na 4 swo susa. A hi tlheleleni eka xikombiso xa hina lexo sungula hi ya kamba loko hi nga siyangi swin'wana.</p> <p>Tsala swivulwa swa tinomboro swa 17, 5 na 22 leswi a swi siyiwile.</p> | <p>Tsala 17, 5 na 22 exitsalelwani.</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">17</td> <td style="text-align: center;">5</td> <td style="text-align: center;">22</td> </tr> <tr> <td colspan="2"></td> <td></td> </tr> <tr> <td colspan="3"></td> </tr> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px; text-align: center;">+</td> <td style="padding: 5px; text-align: center;">-</td> </tr> <tr> <td style="padding: 5px; text-align: center;">minkhakhul<br/>eto</td> <td style="padding: 5px; text-align: center;">minkhakhule<br/>to</td> </tr> <tr> <td style="padding: 5px; text-align: center;"><math>5 + 17 = 22</math></td> <td style="padding: 5px; text-align: center;"><math>22 - 17 = 5</math></td> </tr> <tr> <td style="padding: 5px; text-align: center;"><math>17 + 5 = 22</math></td> <td style="padding: 5px; text-align: center;"><math>22 - 5 = 17</math></td> </tr> <tr> <td style="padding: 5px; text-align: center;"><math>22 = 5 + 17</math></td> <td style="padding: 5px; text-align: center;"><math>5 = 22 - 17</math></td> </tr> <tr> <td style="padding: 5px; text-align: center;"><math>22 = 17 + 5</math></td> <td style="padding: 5px; text-align: center;"><math>17 = 22 - 5</math></td> </tr> </table> | 17 | 5 | 22 |  |  |  |  |  |  | + | - | minkhakhul<br>eto | minkhakhule<br>to | $5 + 17 = 22$ | $22 - 17 = 5$ | $17 + 5 = 22$ | $22 - 5 = 17$ | $22 = 5 + 17$ | $5 = 22 - 17$ | $22 = 17 + 5$ | $17 = 22 - 5$ |
| 17  | 5   | 22 |   |    |  |  |  |  |  |  |   |   |                   |                   |               |               |               |               |               |               |               |               |
|   |   |    |   |    |  |  |  |  |  |  |   |   |                   |                   |               |               |               |               |               |               |               |               |
|   |   |    |   |    |  |  |  |  |  |  |   |   |                   |                   |               |               |               |               |               |               |               |               |
| +   | -   |    |   |    |  |  |  |  |  |  |   |   |                   |                   |               |               |               |               |               |               |               |               |
| minkhakhul<br>eto   | minkhakhule<br>to   |    |   |    |  |  |  |  |  |  |   |   |                   |                   |               |               |               |               |               |               |               |               |
| $5 + 17 = 22$   | $22 - 17 = 5$   |    |   |    |  |  |  |  |  |  |   |   |                   |                   |               |               |               |               |               |               |               |               |
| $17 + 5 = 22$   | $22 - 5 = 17$   |    |   |    |  |  |  |  |  |  |   |   |                   |                   |               |               |               |               |               |               |               |               |
| $22 = 5 + 17$   | $5 = 22 - 17$   |    |   |    |  |  |  |  |  |  |   |   |                   |                   |               |               |               |               |               |               |               |               |
| $22 = 17 + 5$   | $17 = 22 - 5$   |    |   |    |  |  |  |  |  |  |   |   |                   |                   |               |               |               |               |               |               |               |               |

### Mgingiriko yo tirhiwa hi vadyondzi ha un'weun'we

Sweswi vadyondzi va fanele va ringeta nghingiriko wo tirhiwa hi vadyondzi ha un'weun'we lowu nga lulamiseriwa Xisungula Dyondzo xa 3.

Vadyondzi va fanele ku tsala mindyangu ya tinomboro eka dayagiramu leyi nga yona. Va fanele va pananisa vukulu bya tinomboro letintsongo timbirhi na vukulu bya tibara letintsongo.

Vito:

**Ku Yelanisa ku Hlanganisa na ku Susa Xisungula Dyondzo 3: Nghingiriko wo Tirhiwa hi Vadyondzi ha un'we-un'we**

Tsala mindyangu ya tinomboro eka dayagiramu ya bara leyi nga yona laha hansi. Tlhela u tsala mune wa swivulwa swa tinomboro swa ku hlanganisa na mune swa ku susa eka ndyangu wun'wana na wun'ana.

$$5 + 5 = 10 \quad 3 + 4 = 7 \quad 11 + 1 = 12 \quad 9 = 2 + 7$$

Sungula hi  $5 + 5 = 10$ . Hi yihi dayagiramu leyi panaka na  $5 + 5$ ?

Lemuka leswaku  $5 + 5 = 10$  yo va na swivulwa swa tinomboro swimbirhi swo hlanganisa na swo susa swimbirhi ntsena.

|  |   |   |   |
|--|---|---|---|
| <input type="text"/>   | <input type="text"/>  | <input type="text"/>  | <input type="text"/>  |
| <input type="text"/>   | <input type="text"/>  | <input type="text"/>  | <input type="text"/>  |
| <b>Ku Hlanganisa:</b><br>_____<br>_____<br>_____<br>_____<br>_____ | <b>Ku Hlanganisa :</b><br>_____<br>_____<br>_____<br>_____<br>_____ | <b>Ku Hlanganisa :</b><br>_____<br>_____<br>_____<br>_____<br>_____ | <b>Ku Hlanganisa :</b><br>_____<br>_____<br>_____<br>_____<br>_____ |
| <b>Ku Susa:</b><br>_____<br>_____<br>_____<br>_____<br>_____       | <b>Ku Susa :</b><br>_____<br>_____<br>_____<br>_____<br>_____       | <b>Ku Susa :</b><br>_____<br>_____<br>_____<br>_____<br>_____       | <b>Ku Susa :</b><br>_____<br>_____<br>_____<br>_____<br>_____       |

**Vhidiyo yo Seketela**

Ku Yelanisa ku Hlanganisa & Susa 3



<https://youtu.be/r02iTWMfP0>

**Vhidiyo yo Seketela**

Ku Yelanisa ku Hlanganisa na ku Susa 4



<https://youtu.be/KPsfH209EEM>

**KU YELANISA KU HLANGANISA NA KU SUSA: XISUNGULA DYONDZO XA 4****Xitoloveto xa Menthele xa Minete yi1**

Dirowa tidayagiramu ya bara ta minkatsano ya tinomboro tin'wana na tin'wana ti3 eka tinomboro ta ku suka eka 1-20. Swikombiso swimbirhi swi nyikiwile laha hansi. Dirowa tidayagiramu ta bara leti hi ku languteka ti faneleke ku yelana na tinomboro leti ti nga ta tsariwa.

|    |   |
|----|---|
| 7  | 3 |
| 10 |   |

|    |   |
|----|---|
| 4  | 9 |
| 13 |   |

Sweswi kombela vadyondzi ku ku nyika swivulwa swa tinomboro swo hambanahambana swo hlanganisa na swo susa leswi nga ta fambelana na tidayagiramu ta bara. Loko vadyondzi va ri karhi va vula swivulwa swa tinomboro leswi nga va ka swona, kombetela tinomboro eka dayagiramu ya bara

Tiyisia leswaku vadyondzi va vula swivulwa swa tinomboro swo susa xikan'we na swo hlanganisa:

$$\text{xik. } 7 + 3 = 10 \quad 3 + 7 = 10 \quad 10 - 3 = 7 \quad 10 - 7 = 3$$

Hlohlotela vadyondzi ku vula na swivulwa swa tinomboro leswi 'nhlamulo' yi taka ro sungula,

$$\text{xik. } 10 = 7 + 3 \quad 10 = 3 + 7 \quad 3 = 10 - 7 \quad 7 = 10 - 3$$

*Lemuka: Ku na swivulwa swa tinomboro swa 8 leswi nga kumekaka ku fana na leswi swa 8 laha henhla leswi humaka eka dayagiramu ya bara yin'wna na yin'wana. A swi bohi leswaku vadyondzi va vula swivulwa swa tinomboro hinkwaswo swi ri 8, kambe swi kahle ku va hlohlotela ku vula swo hambanahambana.*

**Nongonoko wa Nghingiriko**

Eka dyondzo leyi hi tirhisa vuxaka exikarhi ka ku hlanganisa na ku susa ku tsala minkakhuleto yo hambanahambana hi ku tirhisa ntlawa wun'we wa tinomboro.

|  |   |
|--|---|
| Khoma mavito 'Yikulu' 'Yintsongo na 'Yintsongo'.<br><br>Mudyondzisi: Hi dyondzile leswaku ku na bara yi1<br>Leyikulu na tibara Letintsongo ti2 eka ndyangu wa tinomboro. Hi thyile tibara leti mavito ya Yikulu, Yintsongo na Yintsongo (kombisa mavito). I mani loyi a nga ta ndzi pfuna ku vekela mavito ya tibara eka dayagiramu ya bara?<br><br>Vitana mudyondzi leswaku a ta vekela mavito eka tibara.<br><br>Mudyondzisi: Ndzi lava leswaku hi hetisa eka ndyangu wa tinomboro 15, 5 na 10 eka dayagiramu ya bara.<br><br>Tsala 15, 5 na 10 exitsalelweni. Tsundzuxa vadyondzi leswaku nomboro leyikulu ku tlula | Dirowa dayagiramu ya bara leyi nga laha hansi exitsalelweni.<br><br><br><br><br><br>15      5      10<br> |
|--|---|

|  |  |    |    |
|--|--|----|----|
| <p>hinkwato yi ta tsariwa eka bara leyi nga thyiwa<br/> Yikulu naswona tinomboro timbirhi<br/> letintsongonyana ti ta tsariwa eka tibara leti nga<br/> thyiwa Yintsongo. Tsala tinomboro u ri karhi u<br/> pfuniwa hi vadyondzi. Loko va hambanisa 10 na 5<br/> tsundzuxa vadyondzi leswaku vukulu bya bara na<br/> vukulu bya nomboro swi fanelo swi fambelana.<br/> Mudyondzisi: Ndzi nyikeni swivulwa swa tinomboro<br/> eka ndyangu wa 15, 5 and 10.</p> <p><i>Lemuka: A swi bohi leswaku u kuma swivulwa<br/> hinkwaswo swa 8 swa ndyangu lowu wa tinomboro.<br/> Leswi swi nga swa nkoka i ku vona loko vadyondzi<br/> va twisia vuxaka exikarhi ka tinomboro. Loko ku ri<br/> na tinhlamulo ta ‘mavunwa’ tsundzuxa tlilasi hi<br/> swivulwa swa ntiyiso na swa mavunwa leswi va swi<br/> dyondzeke nkarhi lowu nga hundza,</i></p> <p><b>xik. Yintsongo—Yikulu = Yintsongo- mavunwa</b></p>   | <p style="text-align: center;">15</p>  |    |    |
| <p>Xiphiko: 25 – 22</p> <p>Mudyondzisi: Loko hi ringeta ku endla nkhakhuleto<br/> lowu hi ku hlayela mintlulo ya 22 ku ya<br/> endzhaku ku suka eka 25 swi ta teka<br/> nkarhi wo leha swinene. Kambe hi nga<br/> dirowa dayagiramu ya bara ya ndyangu<br/> lowu wa tinomboro leswaku hi ta kuma<br/> ndlela yo olovanyana ku kuma nhlamulo<br/> leyi kayivelaka. 25 hi Leyikulu naswona<br/> 22 i yin'wana ya Letintsongo.</p> <p>Dirowa dayagiramu ya bara kutani u tsala 22 na 25.</p> <p>Mudyondzisi: Bara leyi i yintsongo hikuva 22 na 25<br/> (kombetela eka dayagiramu) ti le kusuhi<br/> swinene. Swi nga antswa ku vutisa<br/> leswaku ‘22 yi nga hlanganisiwa na<br/> nomboro yihi ku humesa 25?’<br/> (kombetela eka dayagiramu loko u ri<br/> karhi u vula leswi; tsala xivulwa) kumbe<br/> ‘hi yihi nomboro hi nga yi susaka eka 25<br/> ku kuma 22?’ (kombetela eka<br/> dayagiramu; tsala xivulwa). Ndzi nga<br/> kuma nhlamulo hi ku hlayela ndzi ya<br/> emahlweni hi ku hatlisa ku suka eka 22,<br/> kumbe ndzi hlayela ku ya endzhaku ku<br/> suka eka 25.</p> | <p style="text-align: center;">25 – 22 = <input type="text"/></p> <table border="1"> <tr> <td style="text-align: center;">22</td> </tr> <tr> <td style="text-align: center;">25</td> </tr> </table> <p>Tsala minkhakhuleto:<br/> <math>22 + \square = 25</math><br/> <math>25 - \square = 22</math></p> | 22 | 25 |
| 22   |  |    |    |
| 25   |  |    |    |
| <p>Khakhuleta nomboro leyi kayivelaka na vadyondzi.</p> <p>Tsala ‘3’ eka bara leyintsongo kumbe eka bokisi ro<br/> pfumala nomboro eka xivulwa xa nomboro.</p>   | <p>Tshika dayagiramu na xivulwa exitsalelweni.</p>   |    |    |

|   |  |
|---|--|
| <p>Mudyondzisi: Loko hi kumile nomboro leyi kayivelaka hi nga kota ku vona swivulwa hinkwaswo swa ku hlanganisa na swa ku susa leswi nga endliwaka hi ndyangu lowu wa tinomboro.</p> <p>Tsundzuxa vadyondzi hi swin'wana swa swivulwa leswi nga endliwaka loko u ri karhi u kombetela eka tibara.</p> <p>Mudyondzisi: (u ri karhi u kombetela eka xiphijo xexi a wu nyikiwile xona) Hi hlayele ka 3 ku kuma nhlamulo ku nga ri ka 22. Hi nga langutisa eka dayagiramu ya bara ku kuma nkhakhuleto wo olova swinene.</p> |  |
|---|--|

### **Mgingiriko yo tirhiwa hi vadyondzi ha un'weun'we**

Sweswi vadyondzi va fanele va ringeta swikombiso leswi swi landzelaka hi ku sungula va kopa dayagiramu ya bara va tlhela va nghanisa tinomboro leti ti nyikiweke. Vadyondzi va fanele va tsala nkhakhuleto wo hatlisanyana lowu va wu tirhiseke ku kuma nhlamulo.

$21 - 17 = \square$

$28 - 25 = \square$

|  |  |
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|  |  |
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|  |  |

Vadyondzi va fanele va vula Leyikulu na Leyintsongo eka swivutiso ku hlamusela maehleketelelo ya vona. Xik. "Eka 21 – 17, ndzi cinca nkhakhuleto ku hlayela ndzi ya emahlweni ku suka eka 17 ku ya eka 21 hi ku tirha  $17 + \square = 21$ " kumbe "Ndzi nga cinca nkhakhuleto wa  $21 - 17$  ndzi hlayela ku ya endzhaku ku suka eka 21 ku ya eka 17 hi ku tirha  $21 - \square = 17$ ."

### **Nghingiriko wo famba na wona ekaya: Phepha ro tirhela ra 1**

Emakumu ka dyondzo ya namuntilha nyika vadyondzi Phepha ro tirhela ra 1

A wu fanelanga ku pimela vadyondzi nkarhi loko va ri karhi va tirha eka phepha leri. Xikongomelo i ku nyika vadyondzi nkarhi lesawku va titoloveta hi mgingiriko yo tsala ya leswi va swi endleke emiehlekeweni.

Vito:

**Ku Yelanisa ku Hlanganisa na ku Susa: Phepha Ro Tirhela Ra 1**

1.  $67 + \boxed{\quad} = 72$

2.  $54 - 6 = \boxed{\quad}$

3.  $78 + 7 = \boxed{\quad}$

4.  $26 + \boxed{\quad} = 34$

5.  $99 + \boxed{\quad} = 102$

Tsala tinomboro letinharhu emabokisini:

$13 - 8 = 5$

6.

|                      |                      |
|----------------------|----------------------|
| <input type="text"/> | <input type="text"/> |
| <input type="text"/> |                      |

7.  $206 - 8 = \boxed{\quad}$

8.  $48 + \boxed{\quad} = 54$

9.  $81 - \boxed{\quad} = 78$

10.  $39 + \boxed{\quad} = 44$

Tsala tinomboro 17, 3 na 20 eka swivulwa swa tinomboro laha hansi (11 -14).

|    |   |
|----|---|
| 17 | 3 |
| 20 |   |

11.  $\boxed{\quad} - 3 = \boxed{\quad}$

12.  $\boxed{\quad} + 3 = \boxed{\quad}$

13.  $\boxed{\quad} - \boxed{\quad} = 3$

14.  $3 + \boxed{\quad} = \boxed{\quad}$

15.  $198 + \boxed{\quad} = 202$

16.  $31 - \boxed{\quad} = 28$

17.  $46 + 8 = \boxed{\quad}$

18.  $55 + \boxed{\quad} = 63$

19.  $64 - \boxed{\quad} = 59$

20.  $65 + \boxed{\quad} = 72$

**Tinotsi ta Mudyondzisi**

Laha u nga endla tinotsi hi dyondzo na ku kombisa leswaku i vadyondzi vahi lava va ha lavaka ku pfuniwa hi maqhingha yo hambanahambana.

Nakambe u nga endla tinotsi ta timhaka tin'wana na tin'wana leti u lavaka ku ti langutisa eka xisungula dyondzo lexi landzelaka.

**KU YELANISA KU HLANGANISA NA KU SUSA: XISUNGULA DYONDZO XA 5****Xitoloveto xa Menthele xa Minete yi1**

Ku tirha hi tidayagiramu ta bara

**Nongonoko wa Ngchingiriko**

Eka dyondzo leyi hi kuma minkhakhuleto yo olovanyana leyi yelanaka ya ku hlanganisa laha yin'wana ya tinomboro leti hlanganisiweke yi kayivelaka.

|  |   |
|--|---|
| <p>Swiphijo: <math>6 + \square = 25</math>   <math>\square + 3 = 28</math></p> <p>Mudyondzisi: Eka dyondzo leyi nga hundza hi swi vonile leswaku hi nga cinca nkhakhuleto wu va lovo olovanyana wa ku hlanganisa kumbe wa ku susa leswaku hi ta kuma nomboro leyi yi kayivelaka. Langutisa minkhakhuleto leyi yi nga exitsalelwani</p> | <p>Tsala minkhakhuleto na ti dayagiramu ta bara to pfumala nchumu hi ku ya hi laha swi kombisiweke:</p> $6 + \square = 25$ $\square + 3 = 28$ <table border="1" style="width: 100px; height: 40px; margin-left: auto; margin-right: auto;"></table> <table border="1" style="width: 100px; height: 40px; margin-left: auto; margin-right: auto;"></table> |
| <p>Dirowa tidayagiramu ta bara to pfumala tinomboro leti kombisiweke kutani u tirha na vadyondzi ku aka tidayagiramu ta bara ta minkhakhuleto.. .</p>  | <table border="1" style="width: 100px; height: 40px; margin-left: auto; margin-right: auto;"></table> <table border="1" style="width: 100px; height: 40px; margin-left: auto; margin-right: auto;"></table>   |
| <p>Mudyondzisi: Ndzi pfune ku hetisa tidayagiramu ta bara ta minkhakhuleto leyi.</p>   | $25 - 6 = \square$ $28 - 3 = \square$ <table border="1" style="width: 100px; height: 40px; margin-left: auto; margin-right: auto;"></table> <table border="1" style="width: 100px; height: 40px; margin-left: auto; margin-right: auto;"></table>   |
| <p>Kombela vadyondzi ku ku letela leswaku ku dirowiwa kwihi mintila eka tibara ta le henhla na laha ku nga ta tsariwa nomboro yin'wana na yin'wana.</p>  | <table border="1" style="width: 100px; height: 40px; margin-left: auto; margin-right: auto;"></table> <table border="1" style="width: 100px; height: 40px; margin-left: auto; margin-right: auto;"></table>   |
| <p>Mudyondzisi: Swa olovanyana ku hlamula 25 hi susa 6 (kombetela tinomboro eka bara) kumbe 28 hi susa 3 (kombetela tinomboro eka bara).</p>   | $25 - 6 = 19$ $28 - 3 = 25$ $\downarrow$ $\downarrow$ <table border="1" style="width: 100px; height: 40px; margin-left: auto; margin-right: auto;"></table> <table border="1" style="width: 100px; height: 40px; margin-left: auto; margin-right: auto;"></table>   |
| <p>Tirha minkhakhuleto leyi na vadyondzi, hi ku tirhisu ku tlula ku ya eka khume laha swi faneleke (xik. <math>25 - 5 = 20</math> naswona <math>20 - 1 = 19</math>, kutani <math>25 - 6 = 19</math>).</p>  | $6 + 19 = 25$ $25 + 3 = 28$   |
| <p>Tsala tinomboro eka tibara na le ka mabokisi lama nga ri ki na nchumu hi laha swi kombisiweke ha kona. Tsala swivulwa swa tinomboro leswi a wu nyikiwile swona.</p>   |   |
| <p>Mudyondzisi: Hi kumile swi olovanyana ku hlamula eka minkhakhuleto ya ku hlanganisa hi ku yi cinca yi va yo susa.</p>   |   |
| <p>Mudyondzisi: Hi swi vonile leskau loko hi ri na minkhakhuleto yo tika ya ku hlanganisa kumbe ku susa hi ta vona loko ku ri na ndlela yo ti cinca hi tiendla ti olovanyana.</p>  | <p>Xana ndzi nga cinca...?</p> <p><math>6 + \square = 25</math> ku va <math>\square - 6 = 25</math></p>   |

|  |  |
|--|--|
| <p>Kambe a hi swi koti ku ti cincela eka nkhakhuleto wun'wana na wun'wana.</p> <p>Mudyondzisi: Xana ndzi nga cinca <math>6 + \square = 25</math><br/>yi va <math>\square - 6 = 25</math>?</p> <p>Tsala minkhakhuleto exitsalelwani. Byela vadyondzi leswaku swivulwa swi fanele swi yelanisiwa hi ndlela leyi nga yona ya Leyikulu, Leyintsongo, Leyintsongo eka dayagiramu ya bara.</p> <p>Pfuna vadyondzi ku ehleketa leswaku hi tihini nombororo eka tinombororo eka xivulwa lexi leti nga vuriwaka Leyikulu, Leyintsongo na Leyintsogo kutani u kombisa. Vulavula hi leswaku xana ku 'Leyintsongo Leyintsongo = Leyikulu' swa twisiseka kumbe e-e. Vutisa loko ku ri ntiyiso kumbe ku ri mavunwa.</p> <p>Pfuna ttilasi ku thya <math>\square - 6 = 25</math> hi ndlela yo fana kutani u teka xiboho loko 'Leyintsongo – Leyintsongo = Leyikulu' ku ri ntiyiso kumbe mavunwa.</p> <p>Vadyondzi va fanele va lemuka leswaku <math>\square - 6 = 25</math> i <b>mavunwa</b> eka ndyangu lowu wa tinombororo.</p> <p>Engetela ntiyiso na mavunwa eka swivulwa swa tinombororo.</p> |  |
|  |  |
|  |  |

### Mgingiriko yo tirhiwa hi vadyondzi ha un'weun'we

Sweswi vadyondzi va fanele va ringeta swikombiso leswi swi landzelaka. Eka xin'wana na xin'wana va fanele va dirowa dayagiramu ya bara va tlhela va tsala xivulwa xa tinombororo tani hi nkhakhuleto wo olovanyana wa ku kuma nomboro leyi yi kayivelaka. Loko vadyondzi va tikeriwa, va hlohlotelii ku thya tibara hi ndlela ya Leyikulu, Leyintsongo na Leyintsongo.

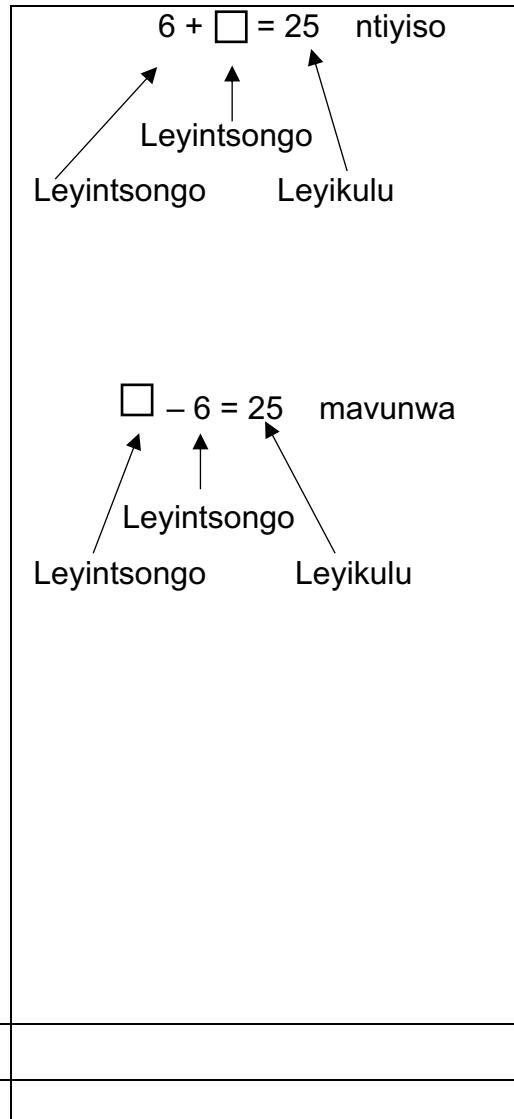
$$7 + \square = 32 \quad \square + 3 = 104$$

### Vhidiyo yo Seketela

Ku Yelanisa ku Hlanganisa & ku Susa 5



<https://youtu.be/bkmaf0ArzuY>



## KU YELANISA KU HLANGANISA NA KU SUSA: XISUNGULA DYONDZO XA 6

### Xitoloveto xa Menthele xa Minete yi1

Ku tirha hi tidayagiramu ta bara

### Nongonoko wa Nghingiriko

Eka dyondzo leyi hi tirhisa vuxaka exikarhi ka ku hlanganisa na ku susa ku endla leswaku minkhakhuleto ya ku susa yi olovanyana.

|   |  |    |   |  |  |    |   |  |  |
|---|--|----|---|--|--|----|---|--|--|
| <p>Swiphiqo: <math>\square - 30 = 9</math>      <math>30 - \square = 9</math></p> <p>Mudyondzisi: Eka dyondzo leyi nga hundza hi vonile hi laha hi nga cincaka hakona nkhakhuleto wu ya eka ku hlanganisa kumbe ku susa loku hambaneke leswaku hi kota ku kuma nomboro leyi kayivelaka. Languta minkhakhuleto leyi nga exitsalelwani.</p> <p>Dirowa tidayagiramu ta bara leti nga ri ki na nchumu leti kombisiweke kutani u tirha na vadyondzi ku aka tidayagiramu ta minkhakhuleto.</p> <p>Mudyondzisi: ndzi pfuneni ku hetisa tidayagiramu ta bara ta minkhakhuleto leyi. Xana tidayagiramu ta bara ti ta fana kumbe ti ta hambana ke?</p> <p>Vadyondzi va fanele va kombisa leswaku ta hambana.</p> <p>Eka xikombiso xo sungula (<math>\square - 30 = 9</math>), nomboro leyi yi nga tivekiki hi Leyikulu naswona 30 na 9 hi Letintsongo.</p> <p>Eka xikombiso xa vumbirhi (<math>30 - \square = 9</math>), 30 hi Leyikulu kasi nomboro leyi nga tivekiki na 9 hi Letintsongo.</p> <p>Kombela vadyondzi leswaku va ku letela laha ku dirowiwaka mintila eka tibara ta le henhla na lomu ku tsariwaka nomboro yin'wana na yin'wana. Loko vadyondzi va tikeriwa, va hlohoteli ku thya tibara hi ndlela ya Leyikulu, Leyintsongo na Leyintsongo.</p> <p>Tshama u ri karhi u vutisa vadyondzi ku lemuka leswi fanaka na leswi hambanaka eka tidayagiramu ta bara timbirhi.</p> <p>Tsala minkhakhuleko leyi landzelaka ehansi ka dayagiramu ya bara leyi nga yona hi laha yi kombisiweke:</p> <p><math>30 + 9 = \square</math>      <math>30 - \square = 9</math></p> | <p>Tsala minkhakhuleto na tidayagiramu ta bara leti nga ri ki na na nchumu hi ku ya hi laha swi kombisiweke ha kona:</p> <p><math>\square - 30 = 9</math>      <math>30 - \square = 9</math></p> <p><input type="text"/> <input type="text"/></p> <p><input type="text"/> <input type="text"/></p> <p><table border="1"> <tr> <td>30</td> <td>9</td> </tr> <tr> <td></td> <td></td> </tr> </table></p> <p><table border="1"> <tr> <td>30</td> <td>9</td> </tr> <tr> <td></td> <td></td> </tr> </table></p> <p><math>30 + 9 = \square</math>      <math>30 - \square = 9</math></p> | 30 | 9 |  |  | 30 | 9 |  |  |
| 30  | 9  |    |   |  |  |    |   |  |  |
|   |  |    |   |  |  |    |   |  |  |
| 30  | 9  |    |   |  |  |    |   |  |  |
|   |  |    |   |  |  |    |   |  |  |

|   |   |              |   |    |   |              |  |              |  |
|---|---|--------------|---|----|---|--------------|--|--------------|--|
| <p>Tirha na vadyondzi ku khakhuleta tinhlamulo eka <math>30 + 9</math> (yi na vuxaka na dayagiramu ya bara leyo sungula) na <math>30 - 9</math> (yi na vuxaka na dayagiramu ya bara leyo sungula).</p> <p>Tirha na vadyondzi ku vekela tinomboro eka minkhakhuleto na le ka tidayagiramu ta bara hi ku ya hi laha swi kombisiweke.</p> <p>Tsala swivulwa swa tinomboro leswo sungula. Komba vadyondzi leswi matirhelo ya <math>30 + 9</math> ya hi pfuniseke xiswona ku hlamula <math>\square - 30 = 9</math> na leswi matirhelo ya <math>30 - 9</math> ya hi pfuniseke xiswona ku hlamula <math>30 - \square = 9</math>.</p> | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; padding: 5px;">30</td><td style="text-align: center; padding: 5px;">9</td><td style="text-align: center; padding: 5px;">21</td><td style="text-align: center; padding: 5px;">9</td></tr> <tr> <td colspan="2" style="text-align: center; padding: 5px;"><math>\boxed{39}</math></td><td colspan="2" style="text-align: center; padding: 5px;"><math>\boxed{30}</math></td></tr> </table><br>$30 + 9 = \boxed{39} \quad 30 - 9 = \boxed{21}$ $\downarrow \qquad \downarrow$ $\boxed{39} - 30 = 9 \quad 30 - \boxed{21} = 9$ | 30           | 9 | 21 | 9 | $\boxed{39}$ |  | $\boxed{30}$ |  |
| 30  | 9   | 21           | 9 |    |   |              |  |              |  |
| $\boxed{39}$  |   | $\boxed{30}$ |   |    |   |              |  |              |  |

### Mgingiriko yo tirhiwa hi vadyondzi ha un'weun'we

Sweswi vadyondzi va fanele va ringeta swikombiso leswi landzelaka hi ku dirowa swikombiso leswi landzelaka hi ku dirowa dayagiramu ya bara na ku tlhela va tsala nakambe swivulwa swa tinomboro tanahi nkhakhuleto wo olova wa ku kuma nomboro leyi kayivelaka:

$$25 - \square = 9 \quad \square - 25 = 9$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona, xik.“eka  $25 - \square = 9$ , ndzi nga cinca nkhakhuleto wu va  $25 - 9$ . Loko ndzi susa 9 eka 25, ndzi kuma 16 hikuva  $25 - 5$  i 20 naswona  $20 - 4 = 16$ . Leswi swi vula leswaku  $25 - \boxed{16} = 9$ .”

### Vhidiyo yo Seketela

Ku Yelanisa ku Hlanganisa & ku Susa 6



<https://youtu.be/OnF8U7aBPOc>

## KU YELANISA KU HLANGANISA & KU SUSA: XISUNGULA DYONDZO XA 7

### Xitoloveto xa Menthele xa Minete yi1

a. Ku hlanganisa hi ku hatlisa: tinomboro ta dijiti yi1 na tinomboro ta tidijiti ti2 (tirhisa na tinomboro letikulu leti ti nga ta nyika tinhlamulo leti ti hundzaka eka 100 na 200, xik.

$$99 + 2; 99 + 4; 198 + 4; 199 + 3)$$

b. Ku susa hi ku hatlisa: tinomboro ta dijiti yi1 ku suka eka tinomboro ta tidijiti ti2 (tirhisa na tinomboro letikulu leti ti hundzaka eka 100 na 200, xik. 101 – 2; 103 – 4; 203 – 4; 201 – 3)

### Nongonoko wa Ngchingiriko

Eka dyondzo leyi hi yelanisa ku hlanganisa na ku susa leswaku hi kota ku hlamula hi ku olova minkhakhuleto ya ku hlanganisa na ku susa eka tinomboro letikuluo.

|   |  |     |    |    |  |     |  |                |                |                 |  |                 |  |               |               |                 |  |                 |  |
|---|--|-----|----|----|--|-----|--|----------------|----------------|-----------------|--|-----------------|--|---------------|---------------|-----------------|--|-----------------|--|
| <p>Mudyondzisi: A hi tirhiseni leswi hi swi dyondzeke leswaku hi ta kota ku hlamula minkhakhuleto yo karhi laha ku tirhisiwaka tinomboro letikulu. Xana u nga byi vona vuxaka exikarhi ka tinomboro 105, 10 na 95?</p> <p>Dirowa dayagiramu ya bara leyi nga ri ki na tinomboro ku ya hi laha swi kombisiweke hi kona.</p> <p>Mudyondzisi: Tinomboro 105, 10 na 95 ti na kombisa vuxaka loko hi hlanganisa na ku susa. Ti nga vitaniwa tanihi ndyangu wa tinomboro.</p> <p>Vadyondzi va vula vuxaka exikarhi ka 105, 10 na 95 na ku vula laha nomboro yin'wana na yin'wana yi faneleke ku tsariwa kona eka dayagiramu ya bara.</p> <p>Teka tinhlamulo leti vadyondzi va nga ta ti vula ku fana na le ku sunguleni. Tsala tinhlamulo leti u nga ta ti amukela exitsalelwani eka tikholumu timbirhi.</p> <p>U nga pfuna vadyondzi ku hlamula ti2 to hetelela eka kholomu yin'wana na yin'wana hi ku tirhisa swivandla swo fana na :</p> <p><math>105 = \square + \square; 95 = \square - \square; 10 = \square - \square</math></p> <p>Mudyondzisi: Eka ndyangu wa tinomboro wun'wana na wun'wana hi nga endla swivulwa swa tinomboro 4 swo hlanganisa na 4 swo susa. A hi kambeni loko hi nga siyanga nchumu.</p> <p>Tsala swivulwa swa tinomboro swa 105, 10 na 95 leswi a swi nga tsariwangi.</p> <p>Dirowa dayagiramu ya bara ya yin'wana na yin'wana ya swiphiko leswi. Thyana tibara mavito ya 'Leyikulu', 'Leyintsongo' na 'Leyintsongo'. Kuma bara leyi kayivelaka kutandi u tsala nhlamulo eka buloko.</p> <p><math>101 - 98 = \square</math><br/> <math>\square - 99 = 4</math><br/> <math>\square + 2 = 201</math></p> | <p>Tsala 105, 10 na 95 exitsalelwani.</p> <table border="1" style="width: 100%; height: 100px;"> <tr> <td style="width: 50%;">105</td> <td style="width: 50%;">10</td> </tr> <tr> <td colspan="2" style="height: 50%;">95</td> </tr> <tr> <td colspan="2" style="height: 50%;">105</td> </tr> </table><br><table border="1" style="width: 100%; height: 100px;"> <tr> <td style="width: 50%; text-align: center;">+minkhakhuleto</td> <td style="width: 50%; text-align: center;">-minkhakhuleto</td> </tr> <tr> <td colspan="2" style="height: 50%; text-align: center;"><math>10 + 95 = 105</math></td> </tr> <tr> <td colspan="2" style="height: 50%; text-align: center;"><math>95 + 10 = 105</math></td> </tr> </table><br><table border="1" style="width: 100%; height: 100px;"> <tr> <td style="width: 50%; text-align: center;">105 = 95 + 10</td> <td style="width: 50%; text-align: center;">95 = 105 – 10</td> </tr> <tr> <td colspan="2" style="height: 50%; text-align: center;"><math>105 = 10 + 95</math></td> </tr> <tr> <td colspan="2" style="height: 50%; text-align: center;"><math>10 = 105 - 95</math></td> </tr> </table> | 105 | 10 | 95 |  | 105 |  | +minkhakhuleto | -minkhakhuleto | $10 + 95 = 105$ |  | $95 + 10 = 105$ |  | 105 = 95 + 10 | 95 = 105 – 10 | $105 = 10 + 95$ |  | $10 = 105 - 95$ |  |
| 105   | 10   |     |    |    |  |     |  |                |                |                 |  |                 |  |               |               |                 |  |                 |  |
| 95  |  |     |    |    |  |     |  |                |                |                 |  |                 |  |               |               |                 |  |                 |  |
| 105   |  |     |    |    |  |     |  |                |                |                 |  |                 |  |               |               |                 |  |                 |  |
| +minkhakhuleto  | -minkhakhuleto   |     |    |    |  |     |  |                |                |                 |  |                 |  |               |               |                 |  |                 |  |
| $10 + 95 = 105$   |  |     |    |    |  |     |  |                |                |                 |  |                 |  |               |               |                 |  |                 |  |
| $95 + 10 = 105$   |  |     |    |    |  |     |  |                |                |                 |  |                 |  |               |               |                 |  |                 |  |
| 105 = 95 + 10   | 95 = 105 – 10  |     |    |    |  |     |  |                |                |                 |  |                 |  |               |               |                 |  |                 |  |
| $105 = 10 + 95$   |  |     |    |    |  |     |  |                |                |                 |  |                 |  |               |               |                 |  |                 |  |
| $10 = 105 - 95$   |  |     |    |    |  |     |  |                |                |                 |  |                 |  |               |               |                 |  |                 |  |

### **Migungiriko yo tirhiwa hi vadyondzi ha un'weun'we**

Sweswi vadyondzi va fanele va ringeta swikombiso leswi swi landzelaka hi ku vula leswaku hi yihi nomboro Leyikulu na swona hi tihi Letintsongo, ku dirowa tidayagiramu ta bara na ku kuma nomboro leyi kayivelaka.

$$115 - \square = 90 \quad \square + 3 = 210$$

Vadyondzi va fanele va hlamusela maehleketelelo ya vona.

### **Nghingiriko wo famba na wona ekaya: Phepha ro tirhela ra 2**

Emakumu ka dyondzo ya namuntlha nyika vadyondzi Phepha ro tirhela ra 2

A wu fanelanga ku pimela vadyondzi nkarhi loko va ri karhi va tirha eka phepha leri. Xikongomelo i ku nyika vadyondzi nkarhi lesawku va titoloveta hi migingiriko yo tsala ya leswi va swi endleke emiehlekeweni.

### **Vhidiyo yo Seketela**

Ku Yelanisa ku Hlanganisa na ku Susa 7



<https://youtu.be/vIAjz8cKMQ>

Vito:

**Ku Yelanisa ku Hlanganisa na ku Susa: Phepha Ro Tirthela Ra 2**

1.  $72 - 67 = \boxed{\phantom{00}}$

4.  $94 - 88 = \boxed{\phantom{00}}$

2.  $4 + \boxed{\phantom{00}} = 303$

5.  $302 - 298 = \boxed{\phantom{00}}$

3.  $\boxed{\phantom{00}} - 63 = 6$

|     |    |
|-----|----|
|     | 98 |
| 103 |    |

**$34 + 27 = 61$        $36 + 25 = 61$        $61 + 27 = 88$**

7.  $61 - 27 = \boxed{\phantom{00}}$

8.  $\boxed{\phantom{00}} + 36 = 61$

Tirhisa tinomboro tinharrhu leti nga laha hansi eka minkakhuleto ya ku susa mimbirhi yo hambana :

**$78 + 52 = 130$**

9.  $\boxed{\phantom{00}} - \boxed{\phantom{00}} = \boxed{\phantom{00}}$

10.  $\boxed{\phantom{00}} - \boxed{\phantom{00}} = \boxed{\phantom{00}}$

**Tinotsi ta Mudyondzisi**

Laha u nga endla tinotsi hi dyondzo na ku kombisa leswaku i vadyondzi vahi lava va ha lavaka ku pfuniwa hi maqhingha yo hambanahambana.

Nakambe u nga endla tinotsi ta timhaka tin'wana na tin'wana leti u lavaka ku ti langutisa eka xisungula dyondzo lexi landzelaka.

**KU YELANISA KU HLANGANISA NA KU SUSA: XISUNGULA DYONDZO XA 8**  
**Xitoloveto xa Menthele xa Minete yi1**

- Ku hlanganisa hi ku hatlisa: tinomboro ta dijiti yi1 na tinomboro ta tidijiti ti2
- Ku hlanganisa hi ku hatlisa: tinomboro ta dijiti yi1 ku suka eka tinomboro ta tidijiti ti2

**Nongonoko wa Nghingiriko**

Eka dyondzo leyi hi tirhisa vuxaka exikarhi ka ku hlanganisa na ku susa ku ololoxa swiphiqo swa tinhlayo handle ka ku tirhisa dayagiramu ya bara.

|  |   |
|--|---|
| <p>Tsala minkhakhuleto leyi kombisiweke exitsalelwani. Siya xivandla ehansi ka nkhakhuleto wun'wana na wun'wana leswaku u ta kota ku tsala nkhakhuleto wa ku hlanganisa na ku susa lowu lowu yelanaka na lowu wo sungula.</p> <p>Vadyondzi va fanele va ringeta ku ehleketa dayagiramu ya bara eka nkhakhuleto wun'wana na wun'wana. Loko va tikeriwa u nga dirowa dayagiramu ya bara ehansi ka nkhakhuleto.</p> <p>Swikombiso swa leswi u nga endlisaka swona minkhakhuleto minharhu leyo sungula swi nyikiwile laha hansi.</p> | $\square + 3 = 28$<br>$\square - 37 = 6$<br>$202 - 198 = \square$<br>$2 + \square = 51$<br>$22 - \square = 3$ |
| <p>Mudyondzisi: Nhlayo leyi yi nga hlayiwa tani hi: Hi yihi nomboro leyi nga hlanganisiwaka na 3 ku va yi hi nyika 28? U nga wu cinca hi ndlela yihi nkhakhuleto lowu leswaku swi olova ku kuma nomboro leyi kayivelaka?</p> <p>Vadyondzi: <math>28 - 3</math></p> <p>Tsala nkhakhuleto lowu ehansi ka lowu wo sungula.</p> <p>Mudyondzisi: Xana hi yihi nhlamulo?</p> <p>Vadyondzi: 25</p> <p>Vadyondzi va nga hlayela ku ya endzhaku loko nhlamulo va nga yi tivi (27, 26, 25, kutani; nhlamulo i 25).</p>                     | $\square + 3 = 28$<br>$28 - 3 = \square$  |
| <p>Mudyondzisi: Nhlayo leyi yi nga hlayiwa tanahi: Hi yihi nomboro leyi loko ku susiwa 37 eka yona 37 yi ringanaka na 6? Xana u nga cinca hi ndllea yihi nkhakhuleto lowu ku edla leswaku ku kuma nomboro leyi kayivelaka swi olovanyana?</p> <p>Vadyondzi: <math>6 + 37</math> (kumbe <math>37 + 6</math>)</p> <p>Tsala nkhakhuleto lowu ehansi ka lowu wo sungula.</p> <p>Mudyondzisi: Xana hi yihi nhlamulo?</p>  | $\square - 37 = 6$<br>$6 + 37 = \square$ kumbe $37 + 6 =$   |

|  |   |
|--|---|
| Vadyondzi: 43<br><br>Vadyondzi va nga hlayela ku ya emahlweni ku suka eka 37 (38, 39, 40, 41, 42, 43, kutani nhlamulo i 43). Van'wana va nga tlula ku ya eka khume ( $37 + 3 = 40$ na $40 + 3 = 43$ ).   |   |
| Mudyondzisi: Eka nhlayo leyi u komberiwa ku hlamula 202 hi susa 198. Xana u nga cinca hi ndllea yihi nkhakhuleto lowu ku edla leswaku ku kuma nhlamulo swi olovanyana?<br><br>Vadyondzi: $198 \square = 202$<br><br>Tsala nkhakhuleto lowu ehansi ka lowu wo sungula.<br><br>Mudyondzisi: Xana hi yihi nhlamulo?<br><br>Vadyondzi: 4<br><br>Vadyondzi va nga hlayela ku ya emahlweni ku suka eka 198 (199, 200, 201, 202 so; kutani nhlamulo i 4). Van'wana va nga tlula ku ya eka khume ( $198 + 2 = 200$ ; $200 + 2 = 202$ , kutani nhlamulo i 4). | 202 – 198 = <input type="text"/><br><br>$198 + \square = 202$ |

### Migingiriko yo tirhiwa hi vadyondzi ha un'weun'we

Sweswi vadyondzi va fanele va tirhisa maendlelo ya ku cinca minkhakhuleto ya ku hlanganisa yi va ya ku susa, na minkhakhuleto ya ku susa yi va ya ku hlanganisa, loko ku cinca loku swi enda leswaku ku kuma tinomboro leti ti kayivelaka swi olovanyana.

$$4 + \square = 105$$

$$\square + 5 = 69$$

$$\square - 29 = 2$$

$$41 - 36 = \square$$

### Vhidiyo yo Seketela

Ku Yelanisa ku Hlanganisa na ku Susa 8



<https://youtu.be/nYoOex4bibI>

Vito:

**Ku Yelanisa ku Hlanganisa na ku Susa: Xikambelwana Emakumu ka Dyondzo**

XIYENGE XA 1

Timinete ti2 eka papila leri

1.  $76 + \boxed{\quad} = 82$

Tsala 16, 4 na 20 eka swivulwa swa tinomboro laha hansi (11 - 14).

|    |   |
|----|---|
| 16 | 4 |
| 20 |   |

2.  $42 - 4 = \boxed{\quad}$

11.  $\boxed{\quad} - 4 = \boxed{\quad}$

3.  $86 + 5 = \boxed{\quad}$

12.  $\boxed{\quad} + 4 = \boxed{\quad}$

4.  $17 + \boxed{\quad} = 23$

13.  $\boxed{\quad} - \boxed{\quad} = 4$

5.  $199 + \boxed{\quad} = 201$

14.  $4 + \boxed{\quad} = \boxed{\quad}$

Tsala tinomboro letinharhu endzeni ka mabokisi lama nga wona:  $11 - 9 = 2$ .

6.  $\boxed{\quad} | \boxed{\quad} \quad \boxed{\quad}$

15.  $99 + \boxed{\quad} = 102$

7.  $\boxed{\quad}$

16.  $21 - \boxed{\quad} = 19$

8.  $302 - 5 = \boxed{\quad}$

18.  $27 + \boxed{\quad} = 35$

9.  $29 + \boxed{\quad} = 34$

19.  $34 - \boxed{\quad} = 29$

10.  $91 - \boxed{\quad} = 89$

20.  $75 + \boxed{\quad} = 82$

**Ntsengo 20**

**Ku Yelanisa ku Hlanganisa na ku Susa: Xikambelwana Emakumu ka Dyondzo**

XIYENGE XA 2

Timinete ti3 eka papila leri

1.  $73 - 68 = \boxed{\phantom{00}}$

2.  $6 + \boxed{\phantom{00}} = 303$

3.  $\boxed{\phantom{00}} - 82 = 5$

4.  $82 - 75 = \boxed{\phantom{00}}$

5.  $201 - 199 = \boxed{\phantom{00}}$

6.

|                        |    |
|------------------------|----|
| $\boxed{\phantom{00}}$ | 99 |
| 102                    |    |

42 + 15 = 57

27 + 15 = 42

7.  $42 - 15 = \boxed{\phantom{00}}$

42 + 24 = 66

24 + 18 = 42

8.  $\boxed{\phantom{00}} + 24 = 42$

Tirhisa tinomboro tinhарhu leti nga laha hansi eka minkakhuleto ya ku susa mimbirhi yo hambana:

67 + 53 = 120

9.  $\boxed{\phantom{00}} - \boxed{\phantom{00}} = \boxed{\phantom{00}}$

10.  $\boxed{\phantom{00}} - \boxed{\phantom{00}} = \boxed{\phantom{00}}$

**Ntsengo 10**

Swikombatinhlamulo

| <b>Ku Tlula ku ya eka Khume: Swikombatinhlamulo</b>   |                                   |                                   |  |
|---|-----------------------------------|-----------------------------------|--|
| <b>Xikambelwana ku<br/>nga si Sungula<br/>Dyondzo</b> | <b>Phepha ro Tirhela ra<br/>1</b> | <b>Phepha ro Tirhela ra<br/>2</b> | <b>Xikambelwana<br/>Emakumu ka<br/>Dyondzo</b> |
| XIPHEMU XO SUNGULA                                    |                                   |                                   | XIPHEMU XO SUNGULA                             |
| 1. 10   | 1. 10                             | 1. 53                             | 1. 10  |
| 2. 10   | 2. 10                             | 2. 48                             | 2. 10  |
| 3. 3  | 3. 3                              | 3. 8                              | 3. 3   |
| 4. 2  | 4. 7                              | 4. 8                              | 4. 2   |
| 5. 8  | 5. 9                              | 5. 1                              | 5. 8   |
| 6. 10   | 6. 10                             | 6. 3                              | 6. 10  |
| 7. 5  | 7. 5                              | 7. 29                             | 7. 5   |
| 8. 6  | 8. 2                              | 8. 7                              | 8. 7   |
| 9. 10   | 9. 10                             | 9. 3; 44                          | 9. 10  |
| 10. 0   | 10. 6                             | 10. 53; 5                         | 10. 0  |
| 11. 56  | 11. 2                             |                                   | 11. 57   |
| 12. 63  | 12. 5                             |                                   | 12. 63   |
| 13. 33  | 13. 56                            |                                   | 13. 33   |
| 14. 48  | 14. 54                            |                                   | 14. 48   |
| 15. 50  | 15. 22                            |                                   | 15. 50   |
| 16. 127   | 16. 1                             |                                   | 16. 127  |
| 17. 30  | 17. 26                            |                                   | 17. 30   |
| 18. 43  | 18. 44                            |                                   | 18. 42   |
| 19. 3   | 19. 56                            |                                   | 19. 3  |
| 20. 7   | 20. 53                            |                                   | 20. 7  |
| XIPHEMU XA VUMBIRHI                                   |                                   |                                   | XIPHEMU XA VUMBIRHI                            |
| 1. 64   | 21. 40                            |                                   | 1. 74  |
| 2. 79   | 22. 20                            |                                   |  |
| 3. 86   | 23. 6                             |                                   | 2. 78  |
| 4. 6  | 24. 33                            |                                   | 3. 86  |
| 5. 75   |                                   |                                   | 4. 6   |
| 6. 2  |                                   |                                   | 5. 75  |
| 7. 6  |                                   |                                   | 6. 2   |
| 8. 54   |                                   |                                   | 7. 6   |
| 9. 8  |                                   |                                   | 8. 54  |
| 10. 38  |                                   |                                   | 9. 8   |
|   |                                   |                                   | 10. 38   |

Swikombatinhlamulo

| <b>Maqhingha ya ku Tlula: Swikombatinhlamulo</b>      |                                   |                                   |  |
|---|-----------------------------------|-----------------------------------|--|
| <b>Xikambelwana ku<br/>nga si Sungula<br/>Dyondzo</b> | <b>Phepha ro Tirhela ra<br/>1</b> | <b>Phepha ro Tirhela ra<br/>2</b> | <b>Xikambelwana<br/>Emakumu ka<br/>Dyondzo</b> |
| XIPHEMU XO SUNGULA                                    |                                   |                                   | XIPHEMU XO SUNGULA                             |
| 1. 54   | 2. 33                             | 2. 53                             | 1. 52  |
| 2. 39   | 3. 47                             | 3. 39                             | 2. 39  |
| 3. 36   | 4. 3                              | 4. 53                             | 3. 36  |
| 4. 47   | 5. 60                             | 5. 24                             | 4. 47  |
| 5. 17   | 6. 16                             | 6. 15                             | 5. 17  |
| 6. 53   | 7. 32                             | 7. 20                             | 6. 53  |
| 7. 44   | 8. 59                             | 8. 30                             | 7. 44  |
| 8. 4  | 9. 86                             | 9. 20                             | 8. 3   |
| 9. 31   | 10. 40                            | 10. 29                            | 9. 31  |
| 10. 11  | 11. 64                            |                                   | 10. 11   |
| 11. 60  | 12. 46                            |                                   | 11. 50   |
| 12. 48  | 13. 46                            |                                   | 12. 48   |
| 13. 54  | 14. 60                            |                                   | 13. 54   |
| 14. 46  | 15. 53                            |                                   | 14. 46   |
| 15. 40  | 16. 63                            |                                   | 15. 40   |
| 16. 39  | 17. 54                            |                                   | 16. 39   |
| 17. 20  | 18. 75                            |                                   | 17. 20   |
| 18. 89  | 19. 30                            |                                   | 18. 84   |
| 19. 40  | 20. 37                            |                                   | 19. 40   |
| 20. 46  |                                   |                                   | 20. 46   |
| XIPHEMU XA VUMBIRHI                                   |                                   |                                   | XIPHEMU XA VUMBIRHI                            |
| 1. 59   |                                   |                                   | 1. 69  |
| 2. 60   |                                   |                                   | 2. 60  |
| 3. 30   |                                   |                                   | 3. 30  |
| 4. 20   |                                   |                                   | 4. 20  |
| 5. 83   |                                   |                                   | 5. 83  |
| 6. 59   |                                   |                                   | 6. 59  |
| 7. 22   |                                   |                                   | 7. 22  |
| 8. 15   |                                   |                                   | 8. 15  |
| 9. 30   |                                   |                                   | 9. 30  |
| 10. 25  |                                   |                                   | 10. 25   |

Swikombatinhlamulo

| Ku Mbirihata na Ku Hafula: Swikombatinhlamulo |  |                           |                           |                                       |
|---|--|---------------------------|---------------------------|---------------------------------------|
| Xikambelwana ku<br>nga si Sungula<br>Dyondzo  | Xisungula Dyondzo<br>xa 1              | Phepha ro<br>Tirhela ra 1 | Phepha ro<br>Tirhela ra 2 | Xikambelwana<br>Emakumu ka<br>Dyondzo |
| XIPHEMU XO<br>SUNGULA                         | 1. Mbirihato wa 4 i<br>8               | 1. 12<br>2. 6             | 1. 64<br>2. 52            | XIPHEMU XO SUNGULA                    |
| 1. 12   | Mintlawa mimbirhi<br>ya va4 i 8        | 3. 18                     | 3. 21                     | 1. 14                                 |
| 2. 6  | Mbirhi loko yi<br>andzisiwa hi 4 i 8   | 4. 14                     | 4. 55                     | 2. 7                                  |
| 3. 18   |  | 5. 8                      | 5. 46                     | 3. 18                                 |
| 4. 16   |  | 6. 9                      | 6. 18                     | 4. 16                                 |
| 5. 6  | 4 x 2 = 8                              | 7. 20                     | 7. 62                     | 5. 7                                  |
| 6. 8  |  | 8. 3                      | 8. 31                     | 6. 8                                  |
| 7. 20   | 2. Hafu ya 8 i 4                       | 9. 6                      | 9. 63                     | 7. 20                                 |
| 8. 7  | 8 loko yi<br>avanyisiwa hi 2 i 4       | 10. 7                     | 10. 2                     | 8. 6                                  |
| 9. 5  |  | 11. 16                    | 11. 88                    | 9. 5                                  |
| 10. 9   | 8 loko yi aviwa<br>exikarhi ka 2 i 4   | 12. 22                    | 12. 76                    | 10. 9                                 |
| 11. 30  | 8 ÷ 2 = 4                              | 13. 16                    | 13. 43                    | 11. 28                                |
| 12. 14  |  | 14. 60                    | 14. 52                    | 12. 14                                |
| 13. 14  | 3. Mbirihato wa 9 i<br>18              | 15. 100                   | 15. 78                    | 13. 14                                |
| 14. 200                                       |  | 16. 7                     | 16. 24                    | 14. 200                               |
| 15. 40  | Mintlawa mimbirhi<br>ya va9 i 18       | 17. 20                    | 17. 98                    | 15. 40                                |
| 16. 80  |  | 18. 5                     | 18. 49                    | 16. 80                                |
| 17. 25  | Mbirhi loko yi<br>andzisiwa hi 9 i 18  | 19. 35                    | 19. 97                    | 17. 25                                |
| 18. 8   | 9 x 2 = 18                             | 20. 140                   | 20. 2                     | 18. 9                                 |
| 19. 15  |  |                           |                           | 19. 15                                |
| 20. 120                                       | 4. Hafu ya 20 i 10                     |                           |                           | 20. 120                               |
| XIPHEMU XA VUMBIRHI                           | 20 loko yi<br>avanyisiwa hi 2 i 10     |                           |                           | XIPHEMU XA VUMBIRHI                   |
| 1. 84   |  |                           |                           | 1. 84                                 |
| 2. 72   | 20 loko yi aviwa<br>exikarhi ka 2 i 10 |                           |                           | 2. 72                                 |
| 3. 32   |  |                           |                           | 3. 32                                 |
| 4. 51   | 20 ÷ 2 = 10                            |                           |                           | 4. 51                                 |
| 5. 94   |  |                           |                           | 5. 94                                 |
| 6. 19   | 5. Ku hlawula ka<br>mudyondzi          |                           |                           | 6. 19                                 |
| 7. 104  | 6. Ku hlawula ka<br>mudyondzi          |                           |                           | 7. 104                                |
| 8. 39   |  |                           |                           | 8. 39                                 |
| 9. 77   |  |                           |                           | 9. 77                                 |
| 10. 2   |  |                           |                           | 10. 2                                 |

Swikombatinhlamulo

| <b>Ku Katsakanya na ku Lulamisa: Swikombatinhlamulo</b> |                                      |                               |  |
|---|--------------------------------------|-------------------------------|--|
| <b>Xikambelwana ku nga si Sungula Dyondzo</b>           | <b>Phepha ro Tirhela ra 1</b>        | <b>Phepha ro Tirhela ra 2</b> | <b>Xikambelwana Emakumu ka Dyondzo</b> |
| XIPHEMU XO SUNGULA                                      | 1. 86                                | 1. 85                         | XIPHEMU XO SUNGULA                     |
| 1. 53   | 2. 47                                | 2. 16                         | 1. 54                                  |
| 2. 39   | 3. 29                                | 3. 82                         | 2. 39                                  |
| 3. 47   | 4. 69                                | 4. 226                        | 3. 47                                  |
| 4. 49   | 5. 97                                | 5. 144                        | 4. 49                                  |
| 5. 117  | 6. 40                                | 6. 9                          | 5. 148                                 |
| 6. 83   | 7. 2                                 | 7. 2                          | 6. 83                                  |
| 7. 30   | 8. 1                                 | 8. 30                         | 7. 30                                  |
| 8. 3  | 9. 400                               | 9. 40                         | 8. 3                                   |
| 9. 3  | 10. ndzhati wa mintsengo wo sungula  | 10. 80 – 40 + 1               | 9. 3                                   |
| 10. 2   |                                      |                               | 10. 2                                  |
| 11. 71  | 11. 18                               |                               | 11. 31                                 |
| 12. 78  | 12. 31                               |                               | 12. 78                                 |
| 13. 41  | 13. 56                               |                               | 13. 41                                 |
| 14. 175   | 14. 165                              |                               | 14. 175                                |
| 15. 37  | 15. 40                               |                               | 15. 37                                 |
| 16. 50  | 16. 20                               |                               | 16. 50                                 |
| 17. 1   | 17. 2                                |                               | 17. 1                                  |
| 18. 100   | 18. 1                                |                               | 18. 100                                |
| 19. 200   | 19. 3                                |                               | 19. 200                                |
| 20. 2   | 20. ndzhati wa mintsengo wa vumbirhi |                               | 20. 2                                  |
| XIPHEMU XA VUMBIRHI                                     |                                      |                               | XIPHEMU XA VUMBIRHI                    |
| 1. 63   |                                      |                               | 1. 53                                  |
| 2. 45   |                                      |                               | 2. 25                                  |
| 3. 125  |                                      |                               | 3. 125                                 |
| 4. 135  |                                      |                               | 4. 135                                 |
| 5. 294  |                                      |                               | 5. 294                                 |
| 6. 9  |                                      |                               | 6. 9                                   |
| 7. 2  |                                      |                               | 7. 2                                   |
| 8. 30   |                                      |                               | 8. 30                                  |
| 9. 40   |                                      |                               | 9. 40                                  |
| 10. 80 – 60 + 1   |                                      |                               | 10. 60 – 30 + 1                        |

| <b>Ku Veketela hi Vuntshwa: Swikombatinhlamulo</b> |                               |                               |  |
|--|-------------------------------|-------------------------------|--|
| <b>Xikambelwana ku nga si Sungula Dyondzo</b>      | <b>Phepha ro Tirhela ra 1</b> | <b>Phepha ro Tirhela ra 2</b> | <b>Xikambelwana Emakumu ka Dyondzo</b> |
| XIPHEMU XO SUNGULA                                 | 1. 8 na 2                     | 1. 102                        | XIPHEMU XO SUNGULA                     |
| 1. 7 na 3  | 2. 4 na 6                     | 2. 57                         | 1. 7 na 3                              |
| 2. 4 na 6  | 3. 2                          | 3. 300                        | 2. 4 na 6                              |
| 3. 4   | 4. 20                         | 4. 83                         | 3. 3                                   |
| 4. 20  | 5. 36 na 64                   | 5. 196                        | 4. 20                                  |
| 5. 30 na 70  | 6. 45 na 55                   | 6. 90                         | 5. 30 na 70                            |
| 6. 51 na 49  | 7. 12                         | 7. 3                          | 6. 51 na 49                            |
| 7. 12  | 8. 14                         | 8. 9                          | 7. 12                                  |
| 8. 17  | 9. 6                          | 9. 37                         | 8. 17                                  |
| 9. 9   | 10. 38                        | 10. 4                         | 9. 9                                   |
| 10. 86   | 11. 157                       | 11. 74 na 26                  | 10. 86                                 |
| 11. 114  | 12. 12                        | 12. 2 na 5                    | 11.132                                 |
| 12. 10   | 13. 9 na 21                   |                               | 12. 10                                 |
| 13. 8 na 12  | 14. 17 na 13                  |                               | 13. 8 na 12                            |
| 14. 4 na 16  | 15. 120                       |                               | 14. 4 na 16                            |
| 15. 100  | 16. 8                         |                               | 15. 100                                |
| 16. 9  | 17. 14 na 6                   |                               | 16. 9                                  |
| 17. 18 na 12                                       | 18. 12 na 8                   |                               | 17. 18 na 12                           |
| 18. 14 na 16                                       | 19. 13                        |                               | 18. 14 na 16                           |
| 19. 31   | 20. 40                        |                               | 19. 31                                 |
| 20. 40   |                               |                               | 20. 40                                 |
| XIPHEMU XA VUMBIRHI                                |                               |                               | XIPHEMU XA VUMBIRHI                    |
| 1. 104   |                               |                               | 1. 105                                 |
| 2. 78  |                               |                               | 2. 98                                  |
| 3. 300   |                               |                               | 3. 300                                 |
| 4. 106   |                               |                               | 4. 106                                 |
| 5. 178   |                               |                               | 5. 178                                 |
| 6. 70  |                               |                               | 6. 70                                  |
| 7. 6   |                               |                               | 7. 8                                   |
| 8. 58  |                               |                               | 8. 58                                  |
| 9. 3   |                               |                               | 9. 3                                   |
| 10. 88 na 12                                       |                               |                               | 10. 36 na14                            |

Swikombatinhlamulo

| <b>Ku Yelanisa ku Hlanganisa na ku Susa: Swikombatinhlamulo</b> |   |                               |  |
|---|---|-------------------------------|--|
| <b>Xikambelwana ku nga si Sungula Dyondzo</b>                   | <b>Phepha ro Tirhela ra 1</b>                   | <b>Phepha ro Tirhela ra 2</b> | <b>Xikambelwana Emakumu ka Dyondzo</b> |
| 1. 4  | 1. 5  | 1. 5                          | 1. 6                                   |
| 2. 38   | 2. 48   | 2. 299                        | 2. 38                                  |
| 3. 91   | 3. 85   | 3. 69                         | 3. 91                                  |
| 4. 6  | 4. 8  | 4. 6                          | 4. 6                                   |
| 5. 2  | 5. 3  | 5. 4                          | 5. 2                                   |
| 6. 2 na 9   | 6. 5 na 8<br>(nonganoko lowu<br>nga wona) na 13 | 6. 5                          | 6. 2 na 9                              |
| 7. 11   |   | 7. 34                         | 7. 11                                  |
| 8. 297  | eka buloko ya le<br>hansi                       | 8. 25                         | 8. 297                                 |
| 9. 5  |   | 9. $130 - 52 = 78^*$          | 9. 5                                   |
| 10. 2   | 7. 198  | 10. $130 - 78 = 52^*$         | 10. 2                                  |
| 11. $20 - 5 = 15$   | 8. 6  | *Tinhlamulo ti nga cincana.   | 11. $20 - 4 = 16$                      |
| 12. $15 + 5 = 20$   | 9. 3  |                               | 12. $16 + 4 = 20$                      |
| 13. $20 - 15 = 5$   | 10. 5   |                               | 13. $20 - 16 = 4$                      |
| 14. $5 + 15 = 20$   | 11. $20 - 3 = 17$                               |                               | 14. $4 + 16 = 20$                      |
| 15. 3   | 12. $17 + 3 = 20$                               |                               | 15. 3                                  |
| 16. 2   | 13. $20 - 17 = 3$                               |                               | 16. 2                                  |
| 17. 43  | 14. $3 + 17 = 20$                               |                               | 17. 43                                 |
| 18. 8   | 15. 4   |                               | 18. 8                                  |
| 19. 5   | 16. 3   |                               | 19. 5                                  |
| 20. 7   | 17. 54  |                               | 20. 7                                  |
| XIPHEMU XA VUMBIRHI   | 18. 8   |                               | XIPHEMU XA VUMBIRHI                    |
| 1. 4  | 19. 5   |                               | 1. 5                                   |
| 2. 398  | 20. 7   |                               | 2. 297                                 |
| 3. 87   |   |                               | 3. 87                                  |
| 4. 7  |   |                               | 4. 7                                   |
| 5. 2  |   |                               | 5. 2                                   |
| 6. 3  |   |                               | 6. 3                                   |
| 7. 27   |   |                               | 7. 27                                  |
| 8. 18   |   |                               | 8. 18                                  |
| 9. $120 - 37 = 83^*$  |   |                               | 9. $120 - 53 = 67^*$                   |
| 10. $120 - 83 = 37^*$   |   |                               | 10. $120 - 67 = 53^*$                  |
| * Tinhlamulo ti nga cincana.                                    |   |                               | * Tinhlamulo ti nga cincana.           |

**Ku Yelanisa ku Hlanganisa na ku Susa Xisungula Dyondzo xa 1: Nggingiriko wo tirhiwa hi vadyondzi ha un'weun'we**

|                        |                        |
|------------------------|------------------------|
| $3 + 6 = 9 \checkmark$ | $6 - 3 = 9 \times$     |
| $9 = 6 + 3 \checkmark$ | $9 - 3 = 6 \checkmark$ |
| $6 + 9 = 3 \times$     | $3 = 9 - 6 \checkmark$ |
| $6 + 3 = 9 \checkmark$ | $9 - 6 = 3 \checkmark$ |
| $3 + 9 = 6 \times$     | $3 - 6 = 9 \times$     |

**Ku Yelanisa ku Hlanganisa na ku Susa Xisungula Dyondzo xa 3: Nggingiriko wo tirhiwa hi vadyondzi ha un'weun'we**

Tsala mindyangu ya tinomboro leyi landzelaka eka dayagiramu ya bara laha hansi. Tlhela u tsala swivulwa swa tinomboro swa ku hlanganisa na swa ku susa swa ndyangu wun'wana na wun'wana.

$$5 + 5 = 10 \quad 3 + 4 = 7 \quad 11 + 1 = 12 \quad 2 + 7 = 9$$

|  |   |   |   |  |   |    |   |    |  |   |   |   |   |  |  |   |   |    |  |
|--|---|---|---|--|---|----|---|----|--|---|---|---|---|--|--|---|---|----|--|
| <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>2</td><td>7</td></tr> <tr><td colspan="2">9</td></tr> </table><br>Ku Hlanganisa:<br>$2 + 7 = 9$<br>$7 + 2 = 9$<br>$9 = 2 + 7$<br>$9 = 7 + 2$<br>Ku Susa:<br>$9 - 2 = 7$<br>$9 - 7 = 2$<br>$7 = 9 - 2$<br>$2 = 9 - 7$ | 2 | 7 | 9 |  | <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>11</td><td>1</td></tr> <tr><td colspan="2">12</td></tr> </table><br>Ku Hlanganisa:<br>$11 + 1 = 12$<br>$1 + 11 = 12$<br>$12 = 1 + 11$<br>$12 = 11 + 1$<br>Ku Susa :<br>$12 - 1 = 11$<br>$12 - 11 = 1$<br>$11 = 12 - 1$<br>$1 = 12 - 11$ | 11 | 1 | 12 |  | <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>3</td><td>4</td></tr> <tr><td colspan="2">7</td></tr> </table><br>Ku Hlanganisa:<br>$3 + 4 = 7$<br>$4 + 3 = 7$<br>$7 = 3 + 4$<br>$7 = 4 + 3$<br>Ku Susa :<br>$7 - 4 = 3$<br>$7 - 3 = 4$<br>$4 = 7 - 3$<br>$3 = 7 - 4$ | 3 | 4 | 7 |  | <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>5</td><td>5</td></tr> <tr><td colspan="2">10</td></tr> </table><br>Ku Hlanganisa:<br>$5 + 5 = 10$<br>$10 = 5 + 5$<br>Ku Susa :<br>$10 - 5 = 5$<br>$5 = 10 - 5$ | 5 | 5 | 10 |  |
| 2  | 7 |   |   |  |   |    |   |    |  |   |   |   |   |  |  |   |   |    |  |
| 9  |   |   |   |  |   |    |   |    |  |   |   |   |   |  |  |   |   |    |  |
| 11   | 1 |   |   |  |   |    |   |    |  |   |   |   |   |  |  |   |   |    |  |
| 12   |   |   |   |  |   |    |   |    |  |   |   |   |   |  |  |   |   |    |  |
| 3  | 4 |   |   |  |   |    |   |    |  |   |   |   |   |  |  |   |   |    |  |
| 7  |   |   |   |  |   |    |   |    |  |   |   |   |   |  |  |   |   |    |  |
| 5  | 5 |   |   |  |   |    |   |    |  |   |   |   |   |  |  |   |   |    |  |
| 10   |   |   |   |  |   |    |   |    |  |   |   |   |   |  |  |   |   |    |  |

