



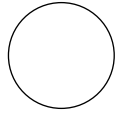
**basic education**

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

Candidate Barcode Label/Stafieskodeplakker

*NSC Answer Book*  
*NSS-antwoordeboek*

National Senior Certificate/*Nasionale Senior Sertifikaat* (Grade 12/*Graad 12*)



Sequence no on mark sheet  
Volgnommer op puntestaat

CENTRE NUMBER <i>SENTRUMNOMMER</i>											
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EXAMINATION NUMBER <i>EKSAMENNOMMER</i>																				
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DATE <i>DATUM</i>											
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BOOK NUMBER <i>BOEKNOMMER</i>		OF <i>VAN</i>		BOOKS <i>BOEKE</i>	
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SUBJECT CODE <i>VAKKODE</i>					
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PAPER NUMBER <i>VRAESTELNOMMER</i>	<b>2</b>
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SUBJECT NAME <i>VAKNAAM</i>	<b>TECHNICAL MATHEMATICS/ <i>TEGNIESE WISKUNDE</i></b>
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This answer book consists of 19 pages./*Hierdie antwoordeboek bestaan uit 19 bladsye.*

MARKER/NASIENER			MODERATOR'S INITIALS IN RELEVANT BLOCK <i>MODERATORPARAAF IN BETROKKE BLOKKIE</i>					
Question <i>Vraag</i>	Marks <i>Punte</i>	Marker's Code & Initials	Marks <i>Punte</i>	SM	DCM	CM	IM	EM
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

RE-MARK/RE-CHECK/ <i>HERNASIEN/HERKONTROLEER</i>		
Question <i>Vraag</i>	Marks <i>Punte</i>	Initials <i>Paraaf</i>
1		
2		
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15		
16		

						<b>TOTAL <i>TOTAAL</i></b>					

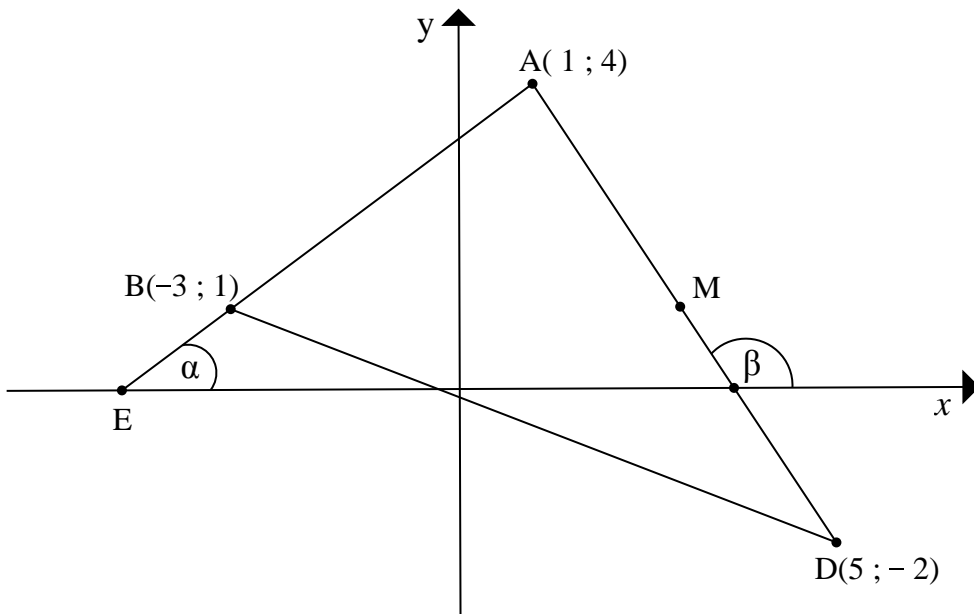
						<b>TOTAL <i>TOTAAL</i></b>					
						<b>HASH TOTAL <i>KAFTOTAAL</i></b>					

CONTROLLED AND CERTIFIED CORRECT (SURNAME AND INITIALS OF EA)	
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READ INSTRUCTIONS ON THE NEXT PAGE.  
*LEES INSTRUKSIES OP VOLGENDE BLADSY.*

FOLLOW THESE INSTRUCTIONS CAREFULLY	VOLG HIERDIE INSTRUKSIES NOUKEURIG
<p>1. Write your examination number and centre number clearly in the spaces provided and attach your examination number sticker in the space provided.</p> <p>2. Remember that your own name (or the name of your school) may not appear anywhere on or in this answer book.</p> <p>3. Answer ALL questions in the spaces provided.</p> <p>4. No pages may be torn from this answer book.</p> <p>5. Read the instructions printed on your timetable carefully as well as any other instructions which may be given in each examination paper.</p> <p>6. Candidates may not retain an answer book or remove it from the examination room. Answer books must be returned to the Invigilator at the end of the examination session.</p> <p>7. Answers must be written in black/blue ink as distinctly as possible. Do not write in the margins.</p> <p>8. Indicate the questions you have answered by drawing a circle around the relevant numbers on the front cover of the answer book where marks are to be recorded.</p> <p>9. Rule off through any work/rough work that must not be marked.</p> <p>10. In the event that you use the additional space provided:  10.1 Write down the number of the question  10.2 Leave a line and rule off after your answer.</p>	<p>1. Skryf jou eksamennommer en sentrumnommer duidelik in die ruimtes soos verskaf en plak jou eksamennommeretiket in die ruimte soos verskaf.</p> <p>2. Onthou dat jou eie naam (of die naam van jou skool) nie op of in hierdie antwoordeboek mag voorkom nie.</p> <p>3. Beantwoord ALLE vrae in die ruimtes wat voorsien is.</p> <p>4. Geen bladsye mag uit hierdie antwoordeboek geskeur word nie.</p> <p>5. Lees die instruksies wat op jou eksamenrooster gedruk is sorgvuldig deur, asook enige ander instruksies wat in elke eksamenvraestel gegee word.</p> <p>6. Geen antwoordeboek mag deur die kandidaat behou of uit die eksamenlokaal verwyder word nie. Antwoordeboeke moet aan die Toesighouer terugbesorg word aan die einde van die eksamensessie.</p> <p>7. Skryf die antwoorde so duidelik moontlik met swart/blou ink. Moenie in die kantlyn skryf nie.</p> <p>8. Dui die vrae wat jy beantwoord het aan op die voorblad van die antwoordeboek waar die punte aangebring word, deur 'n kringetjie te trek om die nommers van die vrae wat jy beantwoord het.</p> <p>9. Trek 'n netjiese lyn deur enige werk/rofwerk wat nie nagesien moet word nie.</p> <p>10. Ingeval jy die bykomende ruimte wat voorsien word, gebruik:  10.1 Skryf die nommer van die vraag neer  10.2 Laat 'n lyn oop en trek 'n lyn na jou antwoord.</p>

**QUESTION/VRAAG 1**

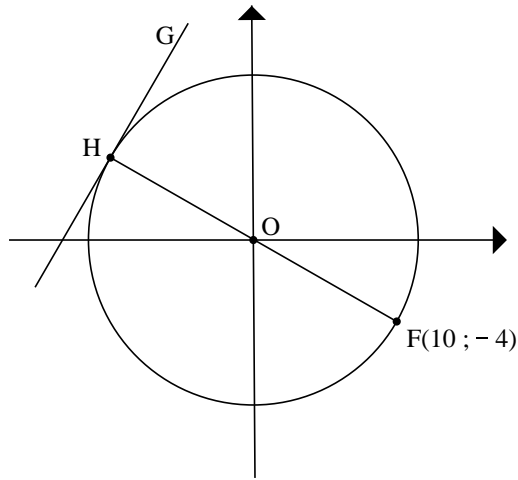


	<b>Solution/Oplossing</b>	<b>Marks Punte</b>
1.1		(3)
1.2		(2)
1.3		(5)

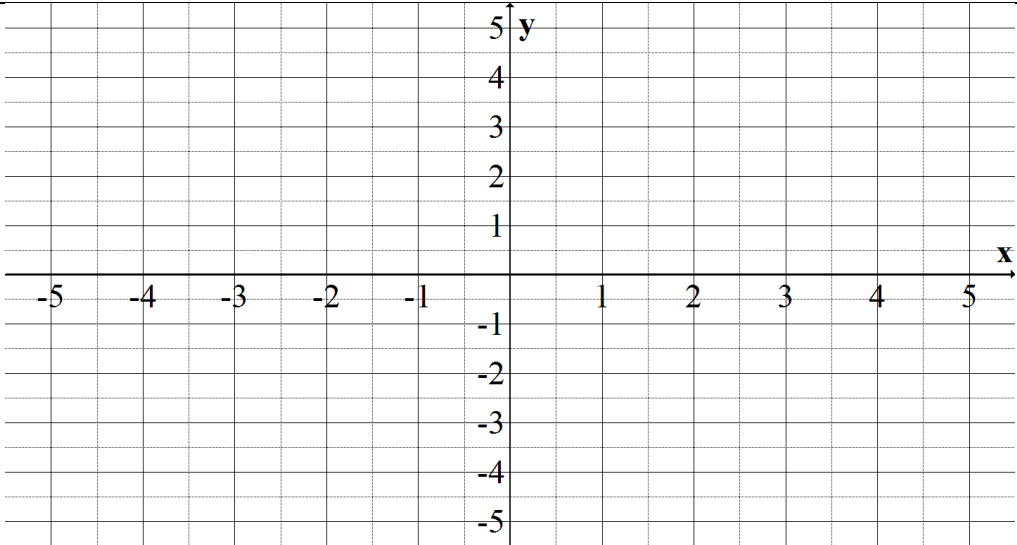


**QUESTION/VRAAG 2**

2.1



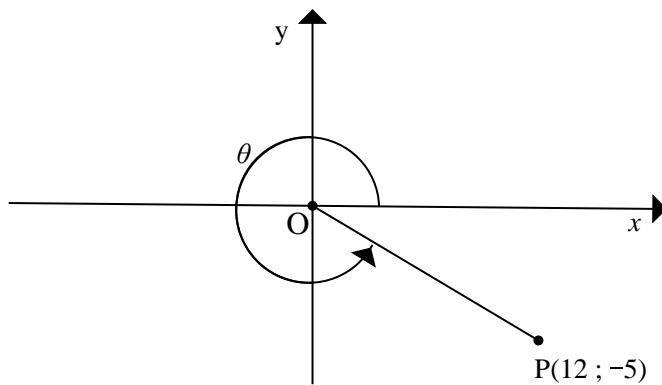
	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
2.1.1		(2)
2.1.2		(2)
2.1.3		(4)

	<b>Solution/Oplossing</b>	<b>Marks Punte</b>
2.2		(3)

[11]

	<b>Additional space/Bykomende ruimte</b>	<b>Marks Punte</b>
	<div style="border: 1px solid black; height: 366px; width: 100%;"></div>	

**QUESTION/VRAAG 3**



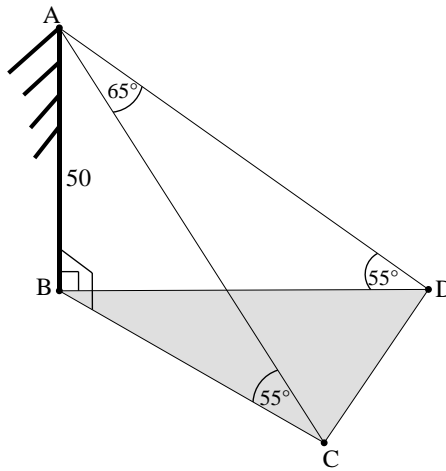
	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
3.1.1		(1)
3.1.2		(3)
3.1.3		(2)
3.2		(3)
		<b>[9]</b>

**QUESTION/VRAAG 4**

	<b>Solution/Oplossing</b>	<b>Marks Punte</b>
4.1		(7)
4.2		(1)
4.3		(4)
4.4		(4)
		<b>[16]</b>

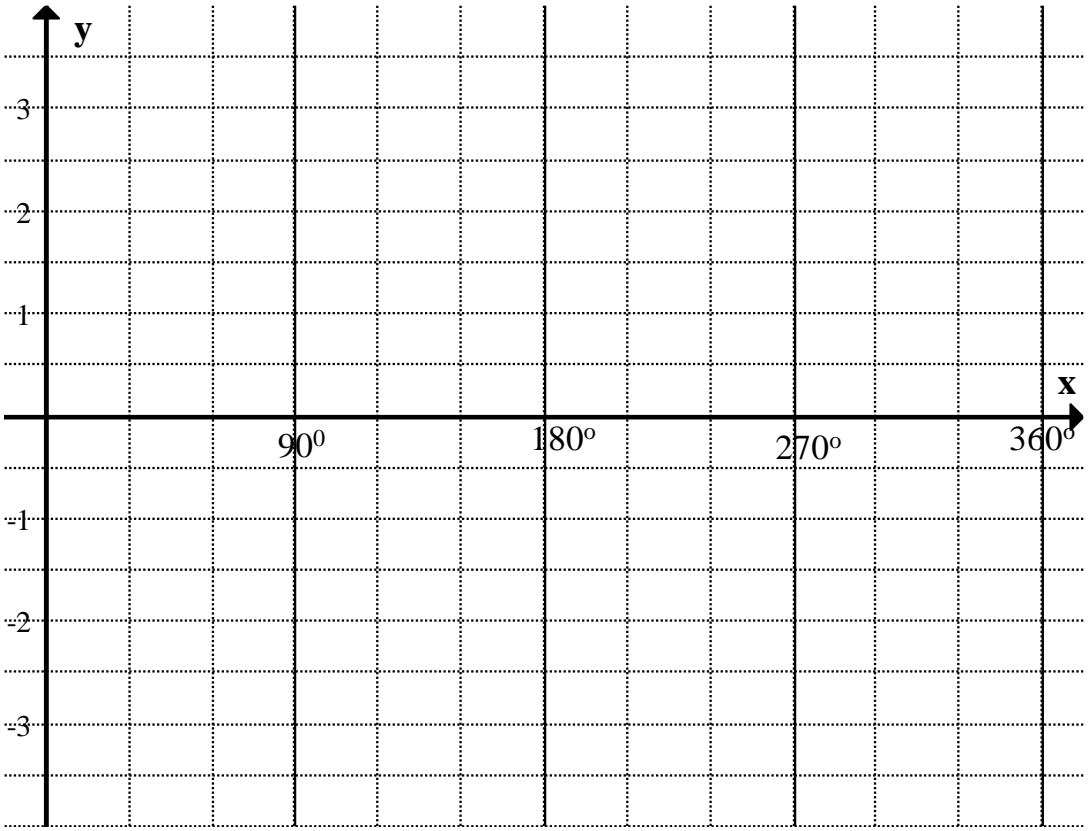


**QUESTION/VRAAG 5**



	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
5.1		(3)
5.2		(4)
5.3		(6)
		<b>[13]</b>

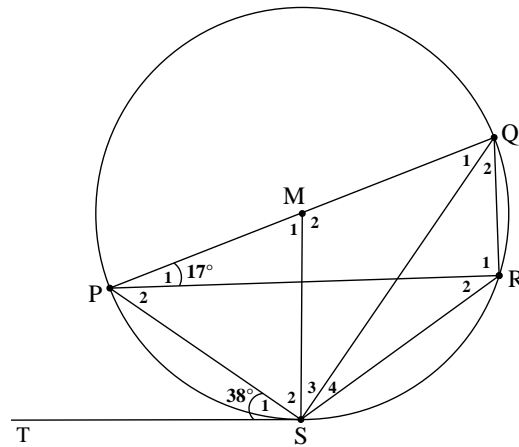
**QUESTION/VRAAG 6**

	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
6.1		(6)
6.2		(1)
6.3		(1)
6.4		(2)
		<b>[10]</b>

**QUESTION/VRAAG 7**

	<b>Solution/Oplossing</b>	<b>Marks Punte</b>
7.1		
		(1)

7.2

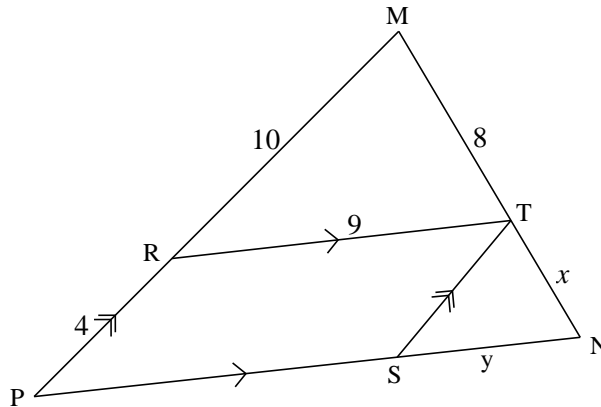


	<b>Solution/Oplossing</b>	<b>Marks Punte</b>
7.2.1		(2)
7.2.2		(2)
7.2.3		(2)
7.2.4		(5)
7.2.5		(1)
		<b>[13]</b>

**QUESTION/VRAAG 8**

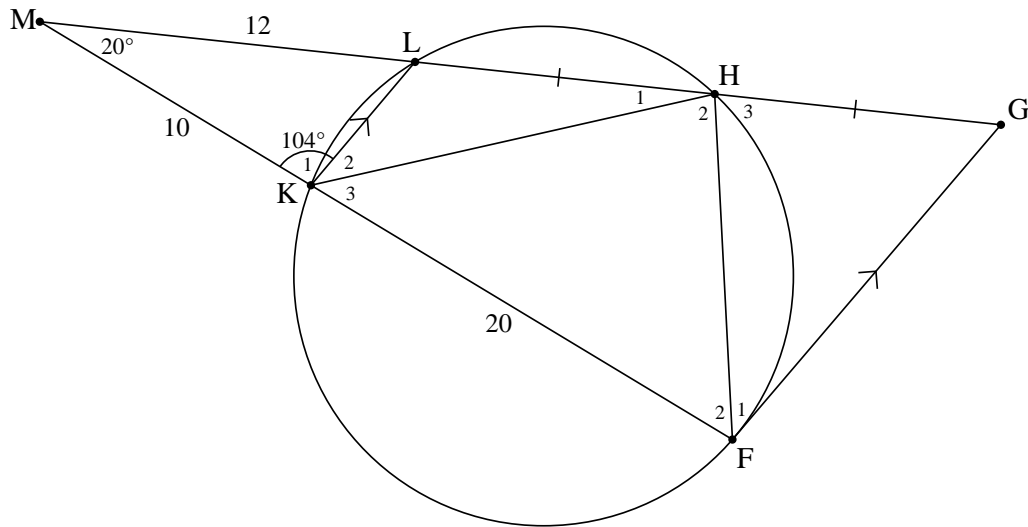
	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
8.1		(1)

8.2



	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
8.2.1		(3)
8.2.2		(2)
8.2.3		(3)
8.2.4		(4)
		<b>[13]</b>

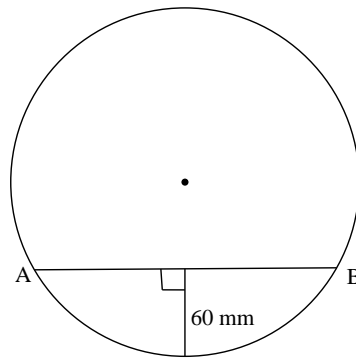
**QUESTION/VRAAG 9**



	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
9.1		(3)
9.2		(3)
9.3.1		(3)
9.3.2(a)		(3)
9.3.2(b)		(1)
		<b>[13]</b>

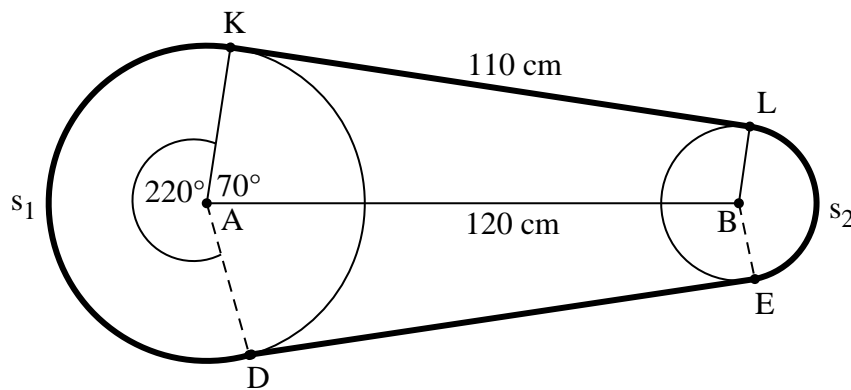
**QUESTION/VRAAG 10**

10.1



	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
10.1		(4)
10.2.1		(4)
10.2.2		(3)

10.3

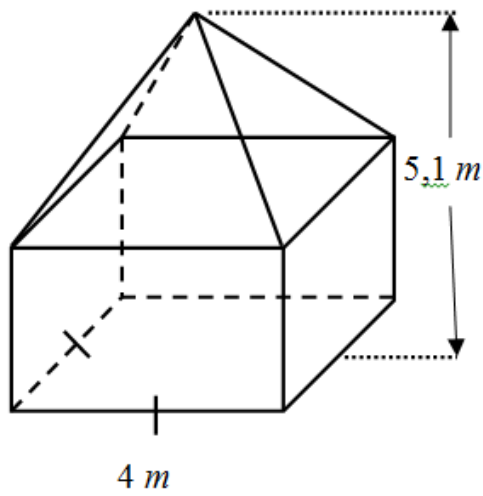


Where  $s_1$  is the arc length of pulley A and  $s_2$  is the arc length of pulley B.

	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
10.3.1		(2)
10.3.2		(6)
		[19]

**QUESTION 11**

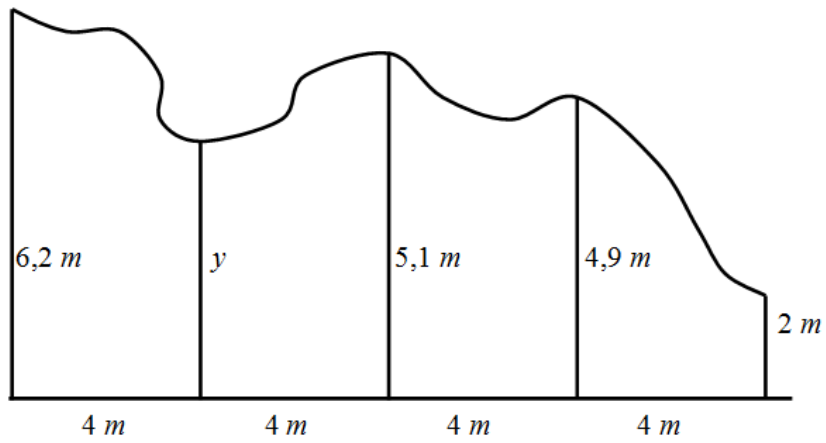
11.1



	<b>Solution/Oplissing</b>	<b>Marks Punte</b>
11.1.1		(6)
11.1.2		(5)
11.1.3		(2)



11.2



	Solution/Oplissing	Marks Punte
11.2		
		(4) [17]



