



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

ENGINEERING GRAPHICS AND DESIGN P2

FEBRUARY/MARCH 2011

MEMORANDUM

MARKS: 100

This memorandum consists of 5 pages.



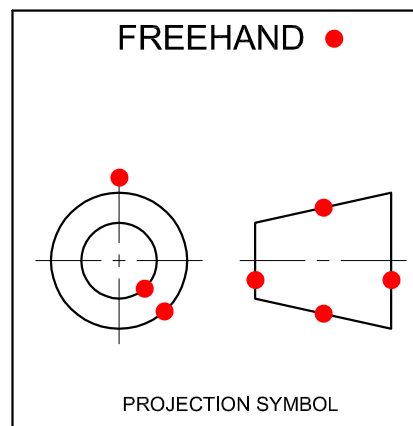
| ANSWERS | | |
|---------|--|---|
| 1 | 05 - 11 - 2010 | 1 |
| 2 | CRANK_003 | 1 |
| 3 | GOVAN MBEKI DRIVE | 1 |
| 4 | STEVEN | 1 |
| 5 | SCALE 1 : 2 | 1 |
| 6 | ± 0,15 | 1 |
| 7 | REMOVED SECTION | 1 |
| 8 | SECTIONAL FRONT VIEW | 1 |
| 9 | SIX | 1 |
| 10 | 10 mm | 1 |
| 11 | C: 198 D: 76 | 2 |
| 12 | R 3 | 1 |
| 13 | COUNTERBORE | 1 |
| 14 | KEYWAY | 1 |
| 15 | TO SECURE THE HANDLE TO THE SPINDLE | 1 |
| 16 | TO SECURE THE CASTLE NUT TO THE SPINDLE OR TO PREVENT THE CASTLE NUT FROM UNWINDING | 1 |
| 17 | PARTIAL SECTION | 1 |
| 18 | SO THAT THE HANDLE AND SPINDLE WILL TURN TOGETHER | 1 |
| 19 | | 2 |
| 20 | | 4 |

TOTAL: 25

ANSWER 19

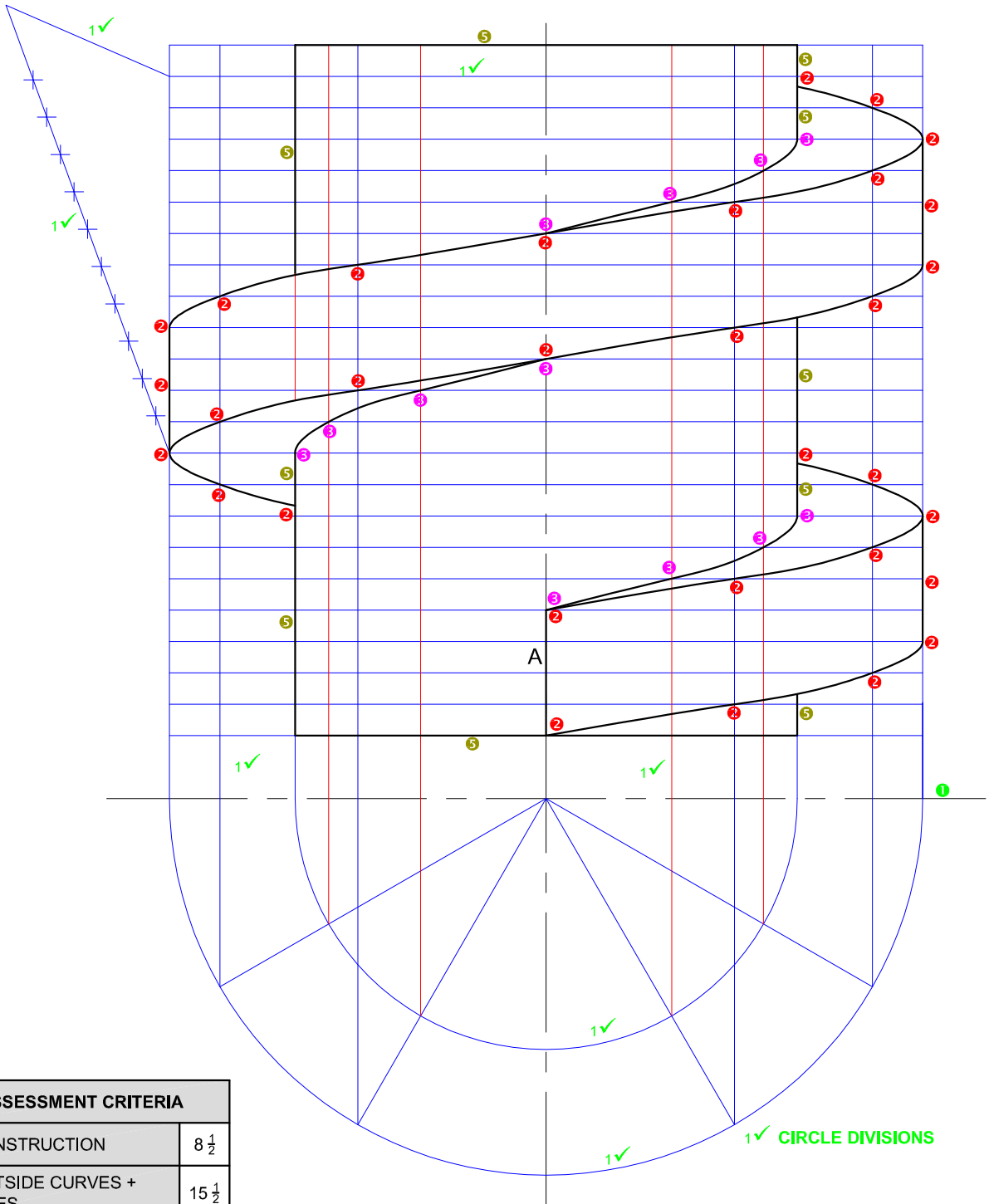


ANSWER 20



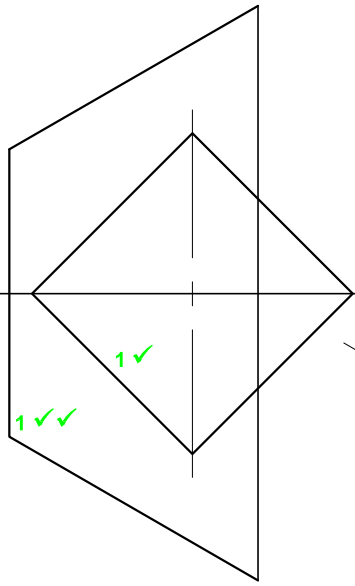


4 ✓✓✓✓ FOR THE QUALITY OF ALL THE CURVES

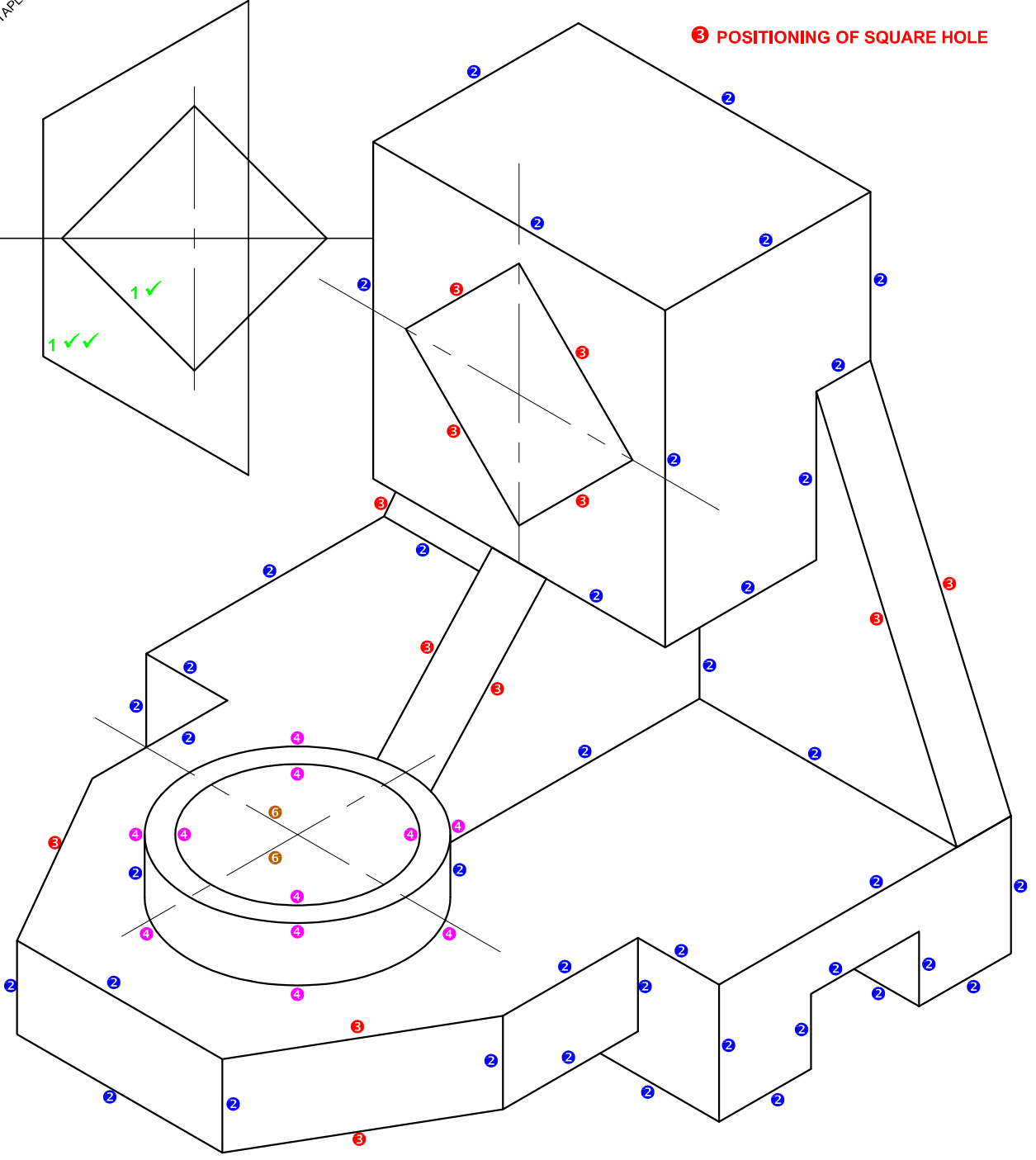


| ASSESSMENT CRITERIA | |
|---------------------------|-----------|
| 1. CONSTRUCTION | 8 1/2 |
| 2. OUTSIDE CURVES + LINES | 15 1/2 |
| 3. INSIDE CURVES | 6 |
| 4. QUALITY OF CURVES | 4 |
| 5. SHAFT | 5 |
| TOTAL | 39 |

PAPER 2 QUESTION 2
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3 POSITIONING OF SQUARE HOLE



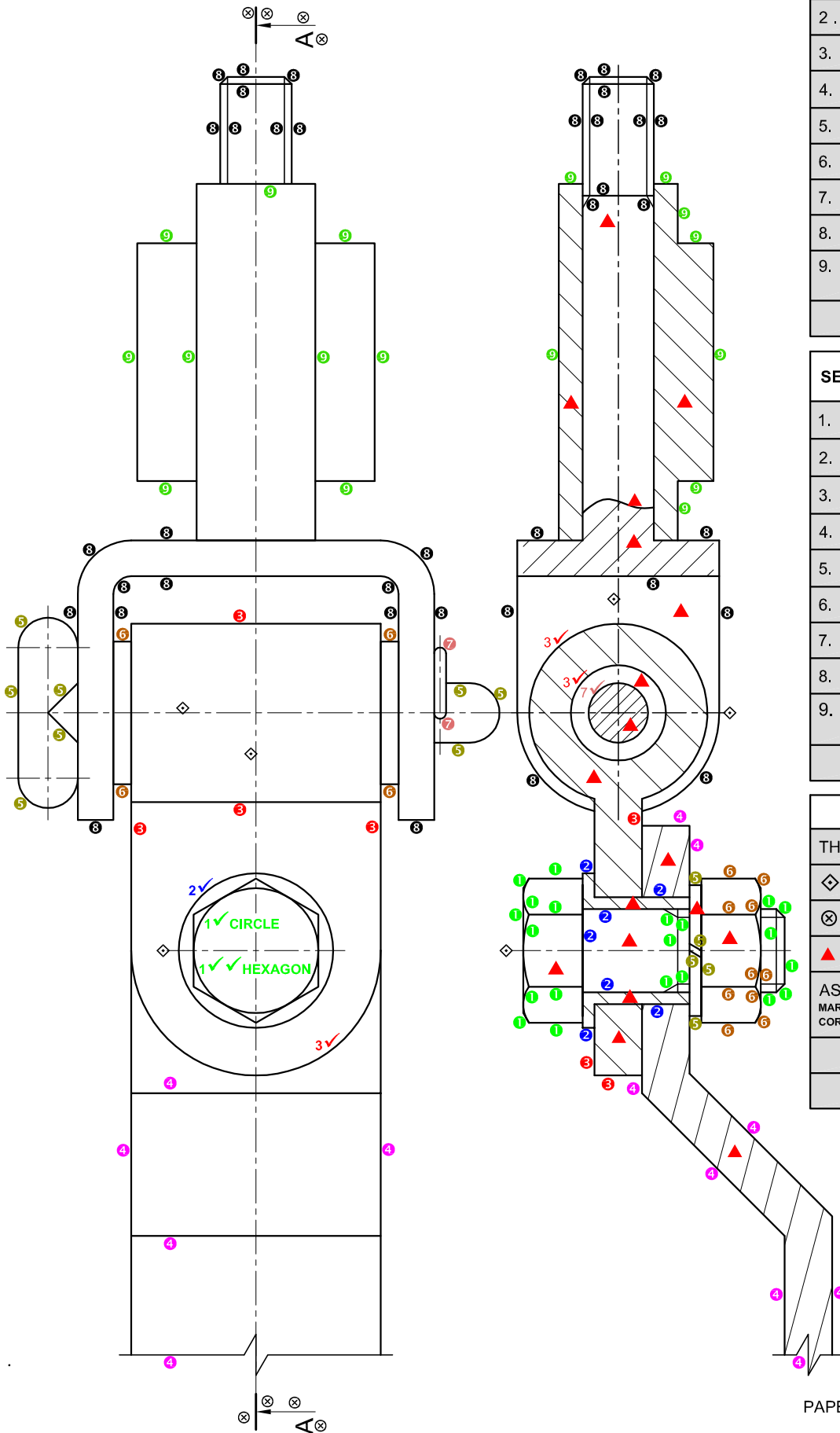
5 ✓✓ CIRCLE CONSTRUCTION

A 1 ✓ FOR CORRECT ORIENTATION FROM A

| ASSESSMENT CRITERIA | |
|------------------------|-----------|
| 1. AUX. VIEW + PLACING | 4 |
| 2. ISOMETRIC LINES | 20 |
| 3. NON-ISOMETRIC LINES | 6½ |
| 4. ISOMETRIC CIRCLES | 5½ |
| 5. CIRCLE CONSTRUCTION | 2 |
| 6. CENTRE LINES | 1 |
| TOTAL | 39 |

PAPER 2 QUESTION 3
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STAPLE



| TOP VIEW | |
|---------------------|-----------|
| | POSSIBLE |
| 1. M14 BOLT | 3 |
| 2. BUSH | 1 |
| 3. SWIVEL | 3 |
| 4. FIXED ARM | 2½ |
| 5. PIN | 4 |
| 6. BUSH | 2 |
| 7. LOCKING PIN | 1 |
| 8. YOKE | 10 |
| 9. MOUNTING BRACKET | 4½ |
| SUBTOTAL | 31 |

| SECTIONAL FRONT VIEW | |
|----------------------|-----------|
| 1. M14 BOLT | 10½ |
| 2. BUSH | 3½ |
| 3. SWIVEL | 3½ |
| 4. FIXED ARM | 4 |
| 5. SPRING WASHER | 2½ |
| 6. M14 NUT | 5 |
| 7. PIN | 1 |
| 8. YOKE | 9 |
| 9. MOUNTING BRACKET | 4 |
| SUBTOTAL | 43 |

| GENERAL | |
|---|-----------|
| THIRD ANGLE | 2 |
| ◇ CENTRE LINES | 3 |
| ⊗ SECTION A-A | 4 |
| ▲ HATCHING | 9 |
| ASSEMBLY MARK OF EVERY PART CORRECTLY ASSEMBLED | 5 |
| SUBTOTAL | 23 |
| TOTAL | 97 |

PAPER 2 QUESTION 4
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