



**LIMPOPO**  
PROVINCIAL GOVERNMENT  
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF  
**EDUCATION**

**VHEMBE EAST DISTRICT**

**SENIOR PHASE**

**GRADE 9**

***MATHEMATICS PAPER 1***

***MEMORANDUM***

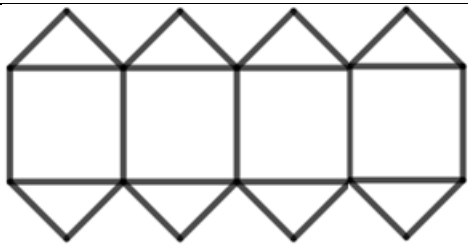
***TERM 4 FINAL EXAMINATION***

***16 NOVEMBER 2023***

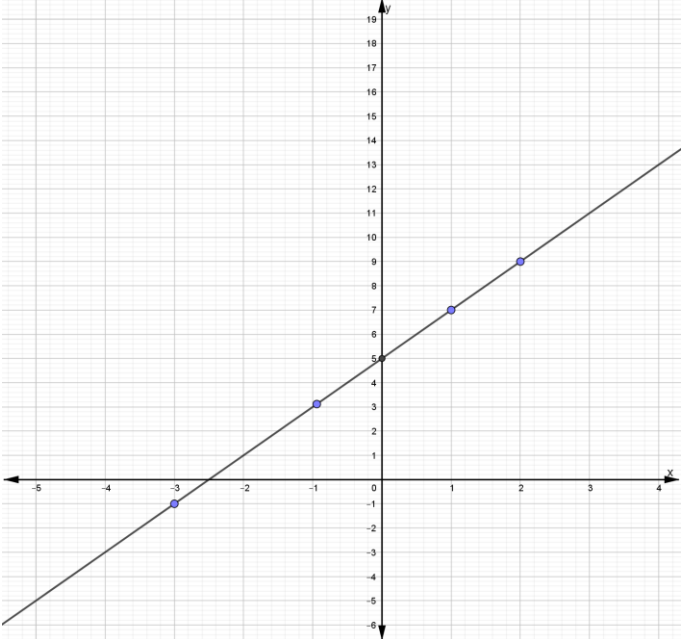
**MARKS: 75**

**This memorandum consists of 5 pages including the cover page.**

| No.               | Mathematical Calculations                                                                                                                                                                         | Clarification on mark allocations                                                                      | Total marks |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------|
| <b>QUESTION 1</b> |                                                                                                                                                                                                   |                                                                                                        | <b>[10]</b> |
| 1.1               | C                                                                                                                                                                                                 | ✓                                                                                                      | 1           |
| 1.2               | C                                                                                                                                                                                                 | ✓                                                                                                      | 1           |
| 1.3               | C                                                                                                                                                                                                 | ✓                                                                                                      | 1           |
| 1.4               | C                                                                                                                                                                                                 | ✓                                                                                                      | 1           |
| 1.5               | B                                                                                                                                                                                                 | ✓                                                                                                      | 1           |
| 1.6               | B                                                                                                                                                                                                 | ✓                                                                                                      | 1           |
| 1.7               | B                                                                                                                                                                                                 | ✓                                                                                                      | 1           |
| 1.8               | D                                                                                                                                                                                                 | ✓                                                                                                      | 1           |
| 1.9               | D                                                                                                                                                                                                 | ✓                                                                                                      | 1           |
| 1.10              | D                                                                                                                                                                                                 | ✓                                                                                                      | 1           |
| <b>QUESTION 2</b> |                                                                                                                                                                                                   |                                                                                                        | <b>[24]</b> |
| 2.1.              | $R74,00 \div 4 = R18,5$ each packet ✓<br>$\therefore R18,5 \times 6 = R 111,00$ ✓                                                                                                                 | ✓ Method<br>✓ Answer only<br><b>Note: Award full marks for answer only.</b>                            | 2           |
| 2.2               | $60 = 2 \times 2 \times 3 \times 5$ ✓<br>$80 = 2 \times 2 \times 2 \times 2 \times 5$ ✓<br><br>LCM= $2 \times 2 \times 2 \times 2 \times 3 \times 5 = 240$ ✓<br>HCF= $2 \times 2 \times 5 = 20$ ✓ | ✓ factors of 60<br>✓ Factors of 80<br><br>✓ 240<br>✓ 20<br><br><b>Note: Accept any correct method.</b> | 4           |
| 2.3               | $A = P \left(1 + \frac{i}{100}\right)^n$ ✓<br>$15\ 000 \checkmark = P \left(1 + \frac{6,5}{100}\right)^5$ ✓<br>$15000 \left(1 + \frac{6,5}{100}\right)^{-5} = P$<br>$\therefore P = 10\ 948,21$ ✓ | ✓ Correct formula<br>✓ ✓ Substitution<br>✓ Answer<br><br><b>Note: Accept any correct method.</b>       | 4           |
| 2.4.1             | $4 \times [20 + (-5)]$<br>$= 4 \times (20 - 5)$<br>$= 4 \times 15$ ✓<br>$= 60$ ✓                                                                                                                  | ✓ Method<br>✓ Answer<br><b>Accept any correct method.</b>                                              | 2           |
| 2.4.2             | $10 \times (-4) + 25 \div (-5)$<br>$= -40 - 5$ ✓<br>$= -45$ ✓                                                                                                                                     | ✓ Method<br>✓ Answer<br><b>Accept any correct method.</b>                                              | 2           |
| 2.4.3             | $2^5 - (-2)^3$                                                                                                                                                                                    | ✓ $-2^3$ or 8                                                                                          | 2           |

|                   |                                                                                                                                                              |                                                     |             |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-------------|
|                   | $= 2^5 + 2^3 \checkmark$<br>$= 32 + 8$<br>$= 40 \checkmark$                                                                                                  | ✓ answer                                            |             |
| 2.4.4             | $\frac{\sqrt[3]{-125} \times \sqrt{64}}{\sqrt{100} \times \sqrt[3]{-64}}$ $= \frac{-5 \times 8}{10 \times -4} \checkmark$ $= \frac{40}{40}$ $= 1 \checkmark$ | ✓✓ Simplification<br>✓ Answer                       | 3           |
| 2.5.1.            | $3^2 \times 3^5$<br>$= 3^{2+5}$<br>$= 3^7 \checkmark$<br>$= 2187 \checkmark$                                                                                 | ✓ Adding exponents<br>✓ Answer                      | 2           |
| 2.5.2.            | $5^2 \times 2^0 - 3^1 \div 6 + (-2)^3$<br>$= 25 \times 1 - \frac{1}{2} - 8 \checkmark$<br>$= \frac{33}{2} \text{ or } 16\frac{1}{2} \checkmark$              | ✓ Method<br>✓ Answer                                | 2           |
| <b>QUESTION 3</b> |                                                                                                                                                              |                                                     | <b>[12]</b> |
| 3.1.1             | 26✓; 37✓                                                                                                                                                     | ✓ 26<br>✓ 37                                        | 2           |
| 3.1.2.            | Add two more than was added to the previous term ✓✓                                                                                                          | ✓✓ Answer                                           | 2           |
| 3.2.1             |  <p style="text-align: center;">PATTERN 4</p>                             | ✓✓ Correct pattern                                  | 2           |
| 3.2.2             | $a = 29 \checkmark$ and $b = 71 \checkmark$                                                                                                                  | ✓ $a = 29$<br>✓ $b = 71$                            | 2           |
| 3.3               | $a = 8 \checkmark$ ; $b = 14 \checkmark$ ; $c = -2 \checkmark$ and $d = -3 \checkmark$                                                                       | ✓ $a = 8$<br>✓ $b = 14$<br>✓ $c = -2$<br>✓ $d = -3$ | 4           |
| <b>QUESTION 4</b> |                                                                                                                                                              |                                                     | <b>[12]</b> |
| 4.1.1.            | $2(x + y) = 2x + 2y \checkmark$                                                                                                                              | ✓ Answer                                            | 1           |
| 4.1.2.            | $(x + 2)(x + 2) = x^2 + 4x + 4 \checkmark \checkmark$                                                                                                        | ✓✓ Answer                                           | 2           |

|                |                                                                                                                                   |                                                    |   |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|---|
| 4.1.3.         | $(x - y)^2 = x^2 - xy + y^2 \checkmark \checkmark$                                                                                | $\checkmark \checkmark$ Answer                     | 2 |
| 4.1.4.         | $\frac{4x^3 - 6x^2 + 2}{2x}$ $= \frac{4x^3}{2x} - \frac{6x^2}{2x} + \frac{2}{2x} \checkmark$ $2x^2 - 3x + \frac{1}{x} \checkmark$ | $\checkmark$ Method<br>$\checkmark$ Answer         | 2 |
| 4.2.1          | $3a + 3b + 3c = 3(a + b + c) \checkmark$                                                                                          | $\checkmark$ Answer                                | 1 |
| 4.2.2          | $x^2 - y^2 = (x - y) \checkmark (x + y) \checkmark$                                                                               | $\checkmark (x - y)$<br>$\checkmark (x + y)$       | 2 |
| 4.2.3          | $x^2 + 8x + 15 = (x + 5) \checkmark (x + 3) \checkmark$                                                                           | $\checkmark (x + 5)$<br>$\checkmark (x + 3)$       | 2 |
| QUESTION 5 [8] |                                                                                                                                   |                                                    |   |
| 5.1            | $x^3 + 24 = -3 \checkmark$                                                                                                        | $\checkmark$ Answer                                | 1 |
| 5.2            | $x = 8 \checkmark$                                                                                                                | $\checkmark$ Answer                                | 1 |
| 5.3.1          | $2x - 3 = 11$ $2x = 14 \checkmark$ $x = \frac{14}{2}$ $x = 7 \checkmark$                                                          | $\checkmark$ Method<br>$\checkmark$ Answer         | 2 |
| 5.3.2          | $x^2 + 3x + 2 = 0$ $(x + 1)(x + 2) = 0$ $x = -1 \checkmark \text{ or } x = -2 \checkmark$                                         | $\checkmark$ Method<br>$\checkmark$ Answer         | 2 |
| 5.3.3          | $\frac{x^2 + 4x + 4}{x + 2} = 0$ $\frac{(x + 2)(x + 2)}{x + 2} = 0 \checkmark$ $x + 2 = 0$ $x = -2 \checkmark$                    | $\checkmark (x + 2)(x + 2)$<br>$\checkmark$ Answer | 2 |
| QUESTION 6 [9] |                                                                                                                                   |                                                    |   |
| 6.1.1          | $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{8 + 6}{-2 - 4} \checkmark = \frac{14}{-6} = -\frac{7}{3} \checkmark$                     | $\checkmark$ Substitution<br>$\checkmark$ Answer   |   |
| 6.1.2          | $y - 8 = -\frac{7}{3}(x + 2) \checkmark$ $y = -\frac{7x}{3} + \frac{10}{3} \checkmark$                                            | $\checkmark$ Method<br>$\checkmark$ Answer         | 2 |
| 6.2.1          | $a = 3 \checkmark$ and $b = 15 \checkmark$                                                                                        | $\checkmark a = 3$<br>$\checkmark b = 15$          | 2 |

|       |                                                                                    |                                                              |   |
|-------|------------------------------------------------------------------------------------|--------------------------------------------------------------|---|
| 6.2.2 |  | <p>✓Points correctly plotted</p> <p>✓✓correct line drawn</p> | 2 |
|-------|------------------------------------------------------------------------------------|--------------------------------------------------------------|---|

**TOTAL = 75**