Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 10

AUGUST 2024

MATHEMATICS

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TERM 3 TEST 1

MARKING GUIDLINE

MARKS : **50**

DURATION : 1 Hour

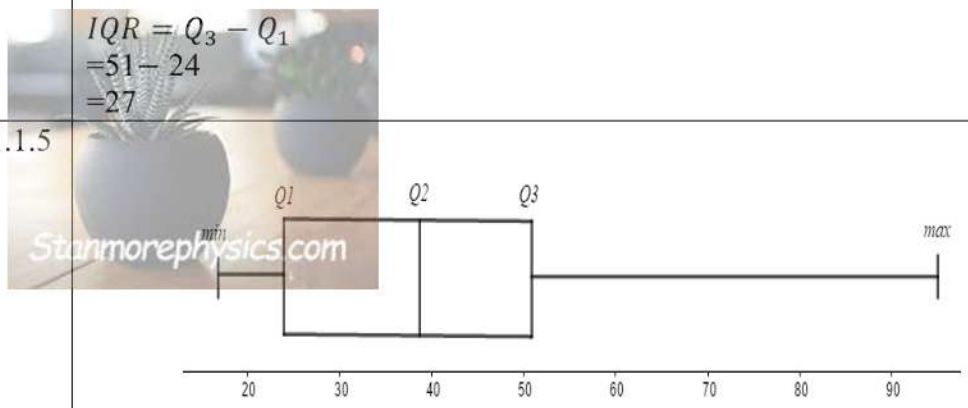
This Marking Guideline consists of 6 pages including the cover page

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NOTE:

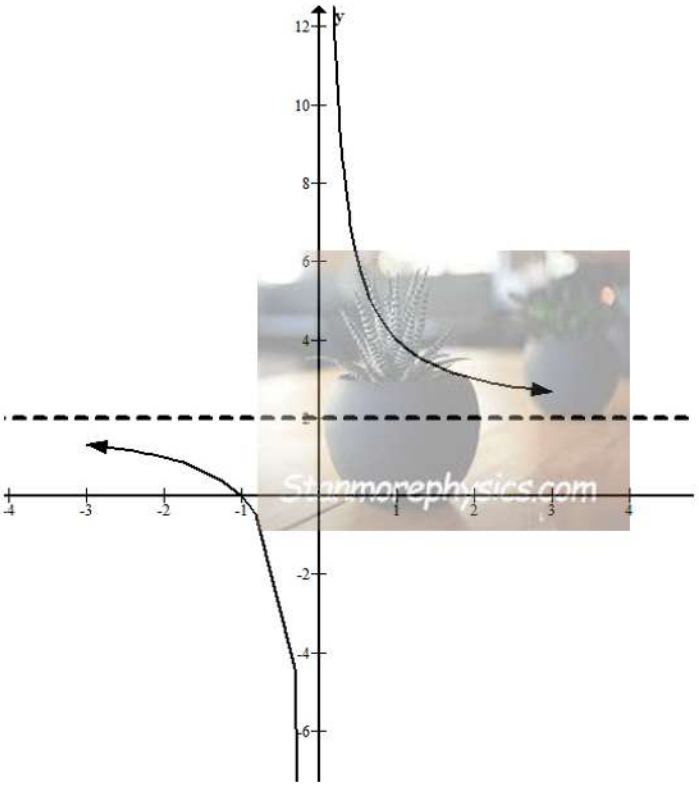
- If a candidate answered a question TWICE, mark only the FIRST attempt.
- If a candidate crossed out an answer and did not redo it, mark the crossed-out answer.
- Consistent accuracy applies to ALL aspects of the marking guidelines.
- Assuming values/answers in order to solve a problem is unacceptable

QUESTION 1

<table>
<tr><td>1,1</td><td colspan="2"></td></tr>
<tr><td>1.1.1</td><td>Mean= $\frac{783}{19}$
=41,21</td><td>method ✓
answer ✓</td></tr>
<tr><td>1.1.2</td><td>Median = 39</td><td>answer ✓</td></tr>
<tr><td>1.1.3</td><td>Mode = 42</td><td>answer ✓</td></tr>
<tr><td>1,1,4</td><td>Q_3= 51
Q_1=24
$IQR = Q_3 - Q_1$
=51− 24
=27</td><td>Q_1 ✓
Q_3✓
answer✓</td></tr>
<tr><td>1.1.5</td><td>

Stanmorephysics.com</td><td>minimum and maximum✓
Q_1 and Q_3✓</td></tr>
<tr><td>1.2</td><td colspan="2"></td></tr>
<tr><td>1.2.1</td><td><table>
<tr><th>Percentage</th><th>frequency</th><th>midpoint</th><th>f×midpont</th></tr>
<tr><td>$12 \leq p < 18$</td><td>8</td><td>15</td><td>120</td></tr>
<tr><td>$18 \leq p < 24$</td><td>20</td><td>21</td><td>420</td></tr>
<tr><td>$24 \leq p < 30$</td><td>12</td><td>27</td><td>324</td></tr>
<tr><td>$30 \leq p < 36$</td><td>8</td><td>33</td><td>264</td></tr>
<tr><td>$36 \leq p < 42$</td><td>2</td><td>39</td><td>78</td></tr>
<tr><td></td><td>50</td><td></td><td>1206</td></tr>
</table></td><td>a, c and e✓
b and d✓</td></tr>
<tr><td>1.2.2</td><td>Estimated mean= $\frac{1206}{50}$
= 24,12</td><td>method ✓
answer ✓
OR
answer only full marks</td></tr>
<tr><td>1.2.3</td><td>Modal class = $18 \leq p < 24$</td><td></td></tr>
<tr><td>1.2.4</td><td>Median position
$\frac{1}{2}(50 + 1)$
=25,5
Median class= $18 \leq p < 24$</td><td>position✓
median class✓
NB
answer only full marks</td></tr>
</table>

QUESTION 2

2.1	$x = 0$ $y = 2$	$x = 0$✓ $y = 2$✓
2.2	$0 = \frac{2}{x} + 2$ $-2 = \frac{2}{x}$ $-2x = 2$ $x = -1$ $(-1; 0)$	$y = 0$✓ $x = -1$✓
2.3		shape✓ asymptote✓ x-intercept✓
2,4	$y = \pm x + 2$ $\therefore y = -x + 2$	method✓ negative gradient✓
2.5	$g(x) = \frac{2}{x} + 2 - 5$ $g(x) = \frac{2}{x} - 3$	method✓ $c = -3$✓ OR answer oly full marks

QUESTION 3

3.1	C(0; −4)	coordinates✓
3.2	D(0; 2	coordinates✓
3.3	$x^2 - 4 = 0$ $(x + 2)(x - 2) = 0$ $x = -2 \text{ or } x = 2$ $B(-2; 0) \text{ or } A(2; 0)$	equating to zero✓ factors ✓ answers✓
3.4	$x^2 - 4 = -x + 2$ $x^2 + x - 6 = 0$ $(x + 3)(x - 2) = 0$ $x = -3 \text{ or } x = 2$ $y = -(-3) + 2$ $y = 5$ $E(-3; 5)$	$f(x) = g(x)$✓ standard form✓ factors✓ coordinates of E✓
3.5	$AB = 2 - (-2)$ $AB = 4 \text{ units}$	method✓ answer✓
3.6	$BK = -x + 2 - (x^2 - 4)$ $BK = -(-2) + 2 - [(-2)^2 - 4]$ $BK = 4 \text{ units}$ OR $y = -(-2)$ $y = 4$ BK=4−0 BK=4 units	method✓ substitution✓ answer✓ OR substitution✓ y-value✓ answer✓
3.7		
3.7.1	$x < -2 \text{ or } x > 2$	both answers✓
3.7.2	$x > 2$	answer✓

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QUESTION 4

4.1	$\tan\theta = \frac{4}{11}$ $\theta = \tan^{-1}(\frac{4}{11})$ $\theta = 19{,}98^{\circ}$	method✓ simplification✓ answer✓
4,2	$\sin 19{,}98 = \frac{4}{H}$ $H = \frac{4}{\sin 19.98}$ $H = 11{,}71\ m$ OR $\cos 19.98 = \frac{11}{H}$ $H = \frac{11}{\cos 19{,}98}$ $H = 11{,}70\ m$ OR $H^2 = (11)^1 + (4)^2$ $H^2 = \sqrt{137}$ $H = 11{,}70$	method✓ answer✓
4.3	NO,the largest value of for a player to score is $19{,}98^{\circ}$ therefore the ball will cross over the poles	answer✓ explanation✓