



GAUTENG PROVINCE

EDUCATION

REPUBLIC OF SOUTH AFRICA

EKURHULENI NORTH DISTRICT

MEMORANDUM

MATHEMATICS

GRADE 8

NOVEMBER CONTROL TEST 2022

DATE: 14 NOVEMBER 2022

TIME: $1\frac{1}{2}$ HOURS

TOTAL: 60

SECTION A

QUESTION 1:

1.1. C ✓

1.2. A ✓

1.3. B ✓

1.4. D ✓

1.5. B ✓

[5]

SECTION B**QUESTION 2:**

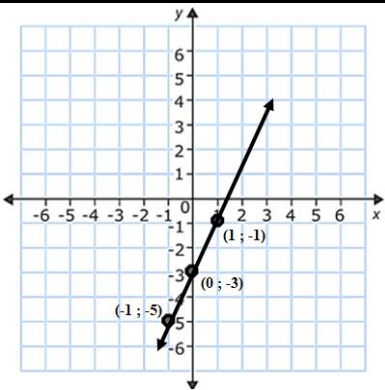
QUESTION	ANSWER	ALLOCATION OF MARKS	MARKS
2.1.1	$\frac{3}{4} \times \frac{4}{5} - 1\frac{2}{5}$ $= \frac{3}{5} - \frac{7}{5}$ $= -\frac{4}{5}$ OR $\frac{3}{4} \times \frac{4}{5} - 1\frac{2}{5}$ $= \frac{12}{20} - \frac{7}{5}$ $= \frac{12}{20} - \frac{28}{20}$ $= \frac{-16}{20}$ $= -\frac{4}{5}$	✓M ✓A	(2)
2.1.2	$0,35 + 0,2 \div 0,1$ $= 0,35 + 2$ $= 2,35$	✓M ✓A	(2)
2.1.3	$-5 \times (-8 + 2)$ $= -5 \times (-6)$ $= 30$	✓M ✓A	(2)

[6]**QUESTION 3:**

3.1.1	$T_n = 3n + 2$	✓A	(1)
3.1.2	$T_n = 3n + 2$ $= 3(29) + 2$ $= 89$	✓Substitution of 29 into the formula that the learner obtained in 3.1.1. ✓CA	(2)

[3]

QUESTION 4:

4.1.1.	Linear	✓ A	(1)								
4.1.2.	20 000 (must accept 20000-25000 → Graph starting point does not sit exactly on 20000)	✓ A	(1)								
4.2.1	<table border="1"> <tr> <td>x</td><td>-1</td><td>0</td><td>1</td></tr> <tr> <td>y</td><td>-5</td><td>-3</td><td>-1</td></tr> </table>	x	-1	0	1	y	-5	-3	-1	✓ A -5 ✓ A -3 ✓ A -1	(3)
x	-1	0	1								
y	-5	-3	-1								
4.2.2		✓ CA _{4.2.1} <i>plot coordinates</i> ✓ M <i>continuous linear graph</i>	(2)								
4.2.3	Increasing	✓ CA _{4.2.2}	(1)								

[8]

QUESTION 5:

5.1.1	$\sqrt{x^2 y^6}$ $= xy^3$	✓ A	(1)
5.1.2.	$8y^2 + 5x - 3xy - 6y^2 - 5x$ $= 2y^2 - 3xy$	✓ $2y^2$ ✓ $-3xy$	(2)

[3]

QUESTION 6:

6.1	$3(2x - 5) = 9x$ $6x - 15 = 9x$ $-3x = 15$ OR $-15 = 3x$ $\frac{-3x}{-3} = \frac{15}{-3}$ $\frac{-15}{3} = \frac{3x}{3}$ $x = -5$ $-5 = x$	✓ M ✓ CA	(2)
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[2]

QUESTION 7:

7.1	line AC is parallel to line FD		✓ <i>parallel</i>	(1)
7.2	STATEMENT	REASON		
	$\hat{AEB} = \hat{FEG} = 70^\circ$	Vertically opposite angles / vert opp <s	✓ <i>statement + reason</i>	
	$\hat{EAB} = \hat{DEA} = 54^\circ$	Alternate angles, DE//AC (accept alt <s DE//AC)	✓ <i>statement + reason</i>	
	$x = \hat{AEB} + \hat{EAB}$ $= 70^\circ + 54^\circ$ $= 124^\circ$	Exterior angle of a triangle = to the sum of the interior opposite angles / ext < of Δ	✓ <i>statement + reason</i> ✓ 124°	
	or			
	$\hat{AEB} = \hat{FEG} = 70^\circ$	Vertically opposite angles / vert opp <s	✓ <i>statement + reason</i>	
	$\hat{EAB} = \hat{DEA} = 54^\circ$	Alternate angles, DE//AC (accept alt <s DE//AC)	✓ <i>statement + reason</i>	
	$\hat{ABE} = 180^\circ - (\hat{AEB} + \hat{EAB})$ $= 180^\circ - (70 + 54^\circ)$ $= 56^\circ$	The sum of the interior angles of a triangle = 180°	✓ <i>statement + reason</i>	(4)

	$x = 180^\circ - \widehat{ABE}$ $= 180^\circ + 56^\circ$ $= 124^\circ$	/ < s of a Δ / sum of < s in Δ The sum of the angles on a straight line = 180° / < s on a str line	✓ 124°	
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[5]

QUESTION 8:

8.1	$\widehat{K} + \widehat{L} = 180^\circ$ (<i>co interior angles $KN \parallel LM$</i>) (accept co-int < s $KN \parallel LM$) $\therefore x + 20^\circ + 3x = 180^\circ$ $4x = 180^\circ - 20^\circ$ $x = \frac{160^\circ}{4} = 40^\circ$	✓ statement ✓ reason ✓ A $x = 40^\circ$	(3)
8.1.2	$\widehat{N} = \widehat{L}$ (<i>Opposite angles of a parallelogram are equal</i>) (Accept opp < s of parm) $\widehat{N} = x + 20^\circ = 40^\circ + 20^\circ = 60^\circ$ Or $\widehat{K} + \widehat{N} = 180^\circ$ (<i>co interior angles $KL \parallel NM$</i>) (accept co-int < s $KL \parallel NM$) $3x + \widehat{N} = 180^\circ$ $\widehat{N} = 180^\circ - 3x$ $\widehat{N} = 180^\circ - 3(40^\circ)$	✓ statement + reason ✓ A $x = 60^\circ$	(2)

	$\hat{N} = 180^\circ - 120^\circ$ $\hat{N} = 60^\circ$		
8.2	<i>Congruent (SSS)</i>	✓ A ✓ reason	(2)

[7]

QUESTION 9:

9.1	$A(4; 5) \rightarrow A'(-4; 5)$	✓ A - 4 ✓ A 5	(2)
9.2	$B(2; 1) \rightarrow B'(-3; -2)$	✓ A - 3 ✓ A - 2	(2)
9.3.1	<i>Translation</i> accept <i>not a transformation</i>	✓	(1)
9.3.2	$(x, y) \rightarrow (x - 8, y - 3)$ accept $(x, y) \rightarrow (x - 7, y - 3)$ accept <i>not a transformation</i>	✓ $x - 8$ ✓ $y - 3$ or ✓ $x - 7$ ✓ $y - 3$ or not a transformation ✓✓	(2)

[7]

QUESTION 10:

10.1.1	She subtracted instead of adding the sides.	✓ A	(1)
10.1.2	$AC^2 = AB^2 + BC^2$ <i>Theorem of Pythagoras</i> $= 8^2 + 6^2$ $= 64 + 36$	✓ formula ✓ substitution ✓ A 10m	(3)

	$= 100$ $AC = 10\text{ m}$		
10.2	$Perimeter = PQ + QR + PR$ $20\text{ cm} = 7\text{ cm} + 4\text{ cm} + PR$ $PR = 20\text{ cm} - 11\text{ cm}$ $= 9\text{ cm}$ <i>PR is the largest side of the triangle therefore, in a right angled triangle</i> $PR^2 = PQ^2 + QR^2$ $LHS = PR^2 = 9^2 = 81\text{ cm}$ $RHS = PQ^2 + QR^2 = 7^2 + 4^2$ $= 49 + 16 = 65\text{ cm}$ <i>The LHS is not equal to the RHS, $PR^2 \neq PQ^2 + QR^2$</i> <i>The triangle is not a right -angled triangle</i>	✓ PR = 9cm ✓ M ✓ $PR^2 \neq PQ^2 + QR^2$	(3)

[7]

QUESTION 11:

11.1.1	<i>Length of diagonal:</i> $FH^2 = FE^2 + EH^2$ <i>theorem of pythagoras</i> $FH = \sqrt{2^2 + 2^2}$ $= \sqrt{8}$ $= 2\sqrt{2}\text{ cm} = \text{diameter of the circle}$ <i>radius of circle</i> $= \frac{2\sqrt{2}}{2} = \sqrt{2}\text{ cm}$ <i>Area of circle</i> $= \pi r^2$ $= \frac{22}{7} \times (\sqrt{2})^2 = 6,29\text{ cm}^2$ <i>Area of square</i> $= s^2 = 2^2 = 4\text{ cm}^2$ <i>area of unshaded circle</i> $= \text{area of circle} - \text{area of square}$ $= 6,29\text{ cm}^2 - 4\text{ cm}^2$ $= 2,29\text{ cm}^2$	✓ M <i>radius of circle</i> ✓ A $\sqrt{2}\text{ cm}$ ✓ M <i>Area of circle</i> ✓ CA $6,29\text{ cm}^2$ ✓ A 4 cm^2 ✓ M <i>area of unshaded circle</i> ✓ CA $= 2,29\text{ cm}^2$	(7)
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[7]

TOTAL : 60