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PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

MATHEMATICS

GRADE 8

FINAL EXAMINATION MEMO

17 NOVEMBER 2017

MARKS: 100

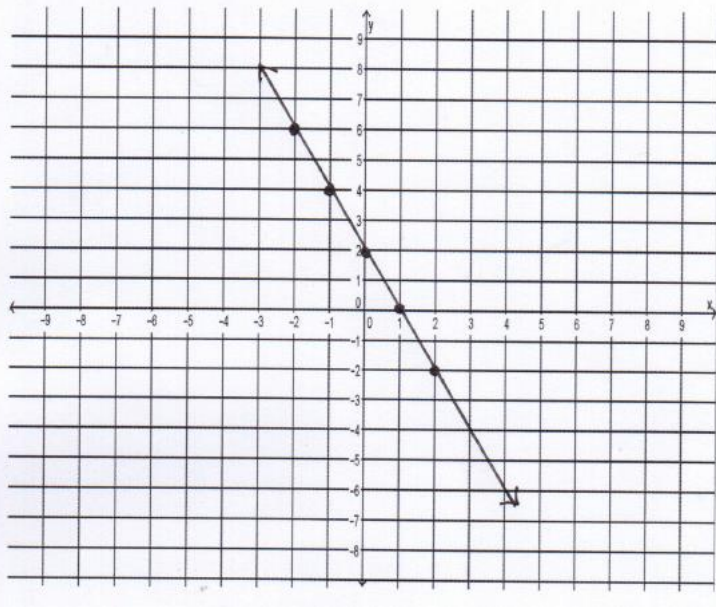
This memo consists of 6 pages including the cover page.

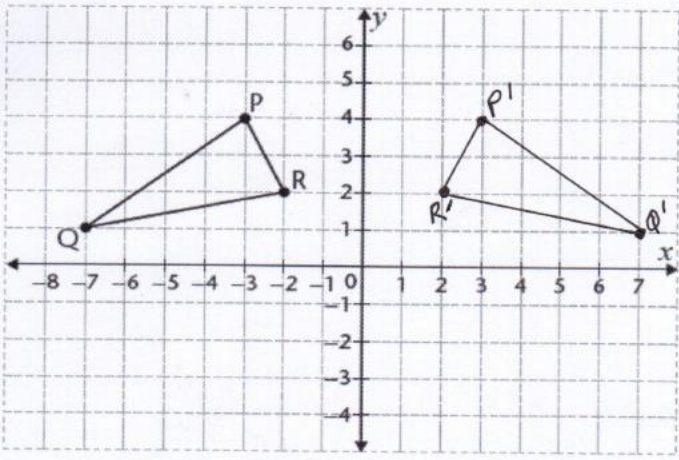
Important Information

This is a marking guideline. In instances where learners have used different but mathematically sound strategies to solve the problems, learners should be credited.

Question 1			26
1.1	Prime factorization: $120 = 2 \times 2 \times 2 \times 3 \times 5$ $300 = 2 \times 2 \times 3 \times 5 \times 5$ $HCF = 2 \times 2 \times 3 \times 5 \checkmark$ $HCF = 60 \checkmark$	Calculation: 1 mark Answer: 1 mark	2
1.2	Hours worked = $5 + 3 + 2 = 10$ hours Portion of money each person must get: John ; Peter ; Thomas $\frac{5}{10} \times R1\ 000$; $\frac{3}{10} \times R1\ 000$; $\frac{2}{10} \times R1\ 000 \checkmark$ $R500 \checkmark$; $R300 \checkmark$; $R200 \checkmark$ Or One-tenth = $\frac{1}{10} \times R1\ 000 = R100$ Portion of money each person must get: John ; Peter ; Thomas 5-tenth; 3-tenth; 2-tenth $5 \times R100$; $3 \times R100$; $2 \times R100$ $R500$; $R300$; $R200$	Calculations: 1 mark Each answer: 1 mark	4
1.3	$2 - (-2) + (4 - 9) = 2 + 2 + (-5) \checkmark = 4 - 5$ $= -1 \checkmark$	Simplify: 1 mark Answer: 1 mark	2
1.4	Temperature = $-3^{\circ}\text{C} \checkmark + 9^{\circ}\text{C} \checkmark = 6^{\circ}\text{C} \checkmark$	Setting integer: 1 mark Answer: 1 mark	3
1.5		Simplify: 1 mark Answer: 1 mark	2
1.5.1	$2y \times 3y^2 - 14y \times y^2 = 6y^3 - 14y^3 \checkmark = -8y^3 \checkmark$		
1.5.2	$3^3 + \sqrt[3]{64} - (2^3)^2$ $= 27 \checkmark + 4 \checkmark - (8)^2 = 31 - 64 \checkmark = -33 \checkmark$	$27 \checkmark$, $+4 \checkmark$ $31 - 64 \checkmark$ $-33 \checkmark$	4
1.6	$2 + \frac{4}{3} - 2\frac{1}{3} = 2 - 2 + \frac{4}{3} - \frac{1}{3} = \frac{3}{3} \checkmark = 1 \checkmark$	Calculation: 1 mark Answer: 1 mark	2
1.7	Money spent = $\frac{2}{5} \times R900 = R360 \checkmark$ Money left = $R900 - R360 \checkmark = R540 \checkmark$ or Fraction of money spent = $\frac{2}{5}$ Fraction of money not spent = $\frac{3}{5}$ Money left = $\frac{3}{5} \times R900 = R540$	Calculations: 2 marks Answer: 1 mark	3

1.8	$\sqrt{0,04} = \sqrt{\frac{4}{100}} = \frac{2}{10} \checkmark = \frac{1}{5} \checkmark$	Calculation: 1 mark Answer: 1 mark	2
1.9	No. of weeks = $\frac{106,75}{15,25} = \frac{106,75 \times 100}{15,25 \times 100} \checkmark = \frac{10\,675}{1525} = 7 \text{ weeks} \checkmark$	Method: 1 mark Answer: 1 mark	2
Question 2			[30]
2.1			
2.1.1	$-2 \checkmark$	Answer: 1 mark	1
2.1.2	$-3n \checkmark + 13 \checkmark$	Answer: 2 marks	2
2.2	A = 1 $\checkmark$	Answer: 1 mark	4
	B = 19 $\checkmark$	Answer: 1 mark	
	C = 31 $\checkmark$	Answer: 1 mark	
	D = 11 $\checkmark$	Answer: 1 mark	
2.3	Rule: $y = 1 \times x - 3$, so $m = 9 \checkmark$ and $n = 37 \checkmark$	Each answer: 1 mark	2
2.4			
2.4.1	1	Answer: 1 mark	2
2.4.2	-3	Answer: 1 mark	
2.5			
2.5.1	$3x + 3 - (3x - 2)$ $= 3x + 3 - 3x + 2 \checkmark$ $= 3x - 3x + 3 + 2 \checkmark$ $= 5 \checkmark$	Simplify: 1 mark Like terms: 1 mark Answer: 1 mark	3
2.5.2	$\frac{6x^5 + 15x^3}{3x^2} = \frac{6x^5}{3x^2} + \frac{15x^3}{3x^2} \checkmark = 2x^3 + 5x \checkmark$	Method: 1 mark Answer: 1 mark	2
2.6	$2x - 20 = 4 \checkmark \checkmark$	Answer: 2 marks	2
2.7			
2.7.1	$x = 12 \checkmark \checkmark$ (Inspection) or $x - 10 = 2$ $x - 10 + 10 = 2 + 10$ $x = 12$	Inverse: 1 mark Answer: 1 mark Or Answer only: 2 marks	2
2.7.2	$4^x + 2 = 66$ $4^x + 2 - 2 = 66 - 2$ $4^x = 64 \checkmark$ $4^x = 4^3 \checkmark$ $x = 3 \checkmark$	Simplify: 1 mark Exponential: 1 mark Answer: 1 mark	3
2.8			
2.8.1	May or towards end of May $\checkmark$	Answer: 1 mark	1
2.8.2	May $\checkmark$	Answer: 1 mark	1
2.8.3	March and April $\checkmark$	Answer: 1 mark	1

2.9	 ✓✓✓	Plotting points: 2 marks Shape: 1	3
Question 3			[25]
3.1	$x + 118^\circ = 180^\circ \checkmark$ <i>Co – interior $\angle$s, $AB \parallel CD$</i> $x + 118^\circ - 118^\circ = 180^\circ - 118^\circ$ $x = 62^\circ \checkmark$ $y = x$ <i>vertically opposite $\angle$s</i> $y = 62^\circ \checkmark$	Statement: 1 mark Answers: 2 marks or Answer only:3 marks	3
3.2	$\hat{B}_1 + 75^\circ + 55^\circ = 180^\circ \checkmark$ <i>Sum of $\angle$s in a straight line</i> $\hat{B}_1 + 130^\circ = 180^\circ \checkmark$ $\hat{B}_1 + 130^\circ - 130^\circ = 180^\circ - 130^\circ$ $\hat{B}_1 = 50^\circ \checkmark$	Statement: 1 mark Calculation: 1 mark Answer: 1 mark Or Answer only:2 marks	3
3.3	$\hat{P} + 40^\circ + 60^\circ = 180^\circ \checkmark$ <i>Sum of $\angle$s in a Δ</i> $\hat{P} + 100^\circ = 180^\circ$ $\hat{P} + 100^\circ - 100^\circ = 180^\circ - 100^\circ$ $\hat{P} = 80^\circ \checkmark$	Statement: 1 mark Answer: 1 mark Or Answer only:2 marks	2
3.4			1
3.4.1	$\hat{K} = 102^\circ \checkmark$, JMLK is a rhombus	Answer: 1 mark	
3.4.2	JK = 6 cm $\checkmark$, JMLK is a rhombus	Answer: 1 mark	1
3.5			1
3.5.1	Similar $\checkmark$	Answer: 1 mark	
3.5.2	Congruent $\checkmark$	Answer: 1 mark	1
3.6		Answer: 1 mark	4
3.6.1	6 $\checkmark$		
3.6.2	Tetrahedron $\checkmark$	Answer: 1 mark	
3.6.3	Triangles $\checkmark$	Answer: 1 mark	

3.6.4	Triangles ✓	Answer: 1 mark	
3.7			
3.7.1	Platonic solid ✓	Answer: 1 mark	1
3.7.2	Prism ✓	Answer: 1 mark	1
3.7.3	Pyramid ✓	Answer: 1 mark	1
3.8 3.8.1	 ✓✓✓	Each correct coordinate: 1 mark	3
3.8.2	$P''(-6; 8)$ ✓ ✓	Answer: 2 marks	2
Question 4			[8]
4.1	Perimeter = $3cm + 8cm + 6cm$ ✓ = $17cm$ ✓	Method: 1 mark Answer: 1 mark	2
4.2	<i>Volume = area of base × height of prism</i> ✓ $= 3m \times 1,5m \times 2m$ ✓ $= 9m^3$ ✓	Method: 1 mark Substitution: 1 mark Answer: 1 mark	3
4.3	$AC^2 = AB^2 + BC^2$ <i>theorem of pythagoras</i> $AC^2 = (5cm)^2 + (12cm)^2$ ✓ $AC^2 = 25cm^2 + 144cm^2$ $AC^2 = 169cm^2$ ✓ $AC^2 = (13cm)^2$ $AC = 13cm$ ✓		3
Question 5			[11]
5.1			
5.1.1	$Range = 50 - 12 = 38$ ✓	Answer: 1 mark	1
5.1.2	43 ✓	Answer: 1 mark	1
5.1.3	41 ✓ ✓	Answer: 2 marks	2
5.2			
5.2.1	Total no. of learners = $36 + 6 + 12 + 18$ ✓ $= 72$ ✓ <i>learners</i>	Calculation: 1 mark Answer: 1 mark	2
5.2.2	Apples ✓	Answer: 1 mark	1
5.2.3	50% ✓	Answer: 1 mark	1
	Or		

	$\% \text{ of learners who eat banana} = \frac{36}{72} \times 100 = 50\%$		
5.3 5.3.1	$P(5H) = \frac{1}{12} \checkmark$	Answer: 1 mark	1
5.3.2	$P(5) = \frac{2}{12} \checkmark = \frac{1}{12} \checkmark$	Identifying: 1 mark Answer: 1 mark	2
	Total =100		