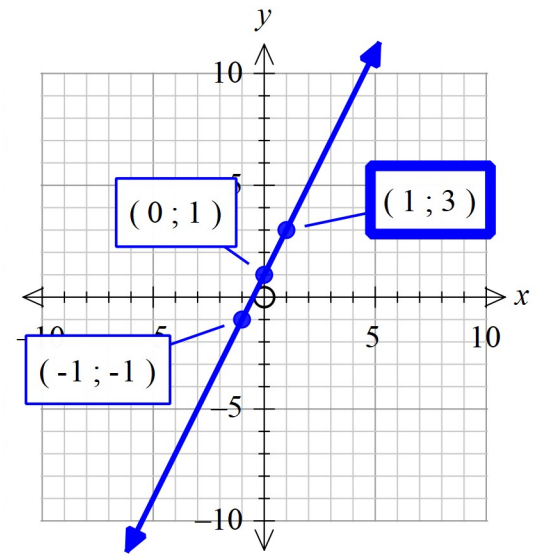
<table>
<tr><th>Question</th><th>Answer</th><th>Mark allocation</th><th>Marks</th></tr>
<tr><td>1.1</td><td>
<table>
<tr><th>Description</th><th>Number</th><th>Mark allocation</th></tr>
<tr><td>Rational numbers</td><td>-4; 7; $\sqrt{16}$; $\frac{-2}{5}$; $\frac{22}{7}$; 2.5</td><td>✓ correct answers only</td></tr>
<tr><td>Positive whole numbers</td><td>7; $\sqrt{16}$</td><td>✓ correct answers only</td></tr>
<tr><td>Factors of 48</td><td>$\sqrt{16}$; or -4</td><td>✓ correct answers only</td></tr>
<tr><td>Equivalent to $\frac{-14}{35}$</td><td>$-\frac{2}{5}$</td><td>✓ correct answers only</td></tr>
<tr><td>Approximations of each other</td><td>-0.3333 and -0.33 or $\frac{22}{7}$ and π</td><td>✓ correct answers only</td></tr>
</table>
</td><td></td><td>5</td></tr>
<tr><td>1.2.1</td><td>Straight-line</td><td>✓ ans</td><td>1</td></tr>
<tr><td>1.2.2</td><td>x – axis; y – axis</td><td>✓ans</td><td>1</td></tr>
<tr><td>1.2.3</td><td>multiply</td><td>✓ ans</td><td>1</td></tr>
<tr><td>1.2.4</td><td>Constant
terms</td><td>✓ ans
✓ans</td><td>2</td></tr>
<tr><td></td><td></td><td></td><td>[10]</td></tr>
<tr><td colspan="4"></td></tr>
<tr><td>2.1</td><td>$\frac{25}{12}$ ✓

$\frac{18}{3} \times \frac{12}{25}$ ✓</td><td>✓ fraction
✓ tip n times</td><td>2</td></tr>
<tr><td>2.2</td><td>$5 - 2\,[2 \times 27 + 4(2 - 8$✓$)]$
$= 5 - 2[54$ ✓ $+ 4(-6)]$
$= 5 - 2[30]$ ✓
$= -55$ ✓</td><td>$\sqrt{64} = 8$ ✓
$3^3 = 27$
$2 \times 27 = 54$ ✓
$4(-6) = -24$
$54 - 24 = 30$ ✓
✓ ans</td><td>4</td></tr>
<tr><td></td><td></td><td></td><td>[6]</td></tr>
</table>

Question	Answer	Mark allocation	Marks
3.1	$5x^2y$ ✓ + $15xy$ ✓	✓ $5x^2y$ ✓$15xy$	2
3.2	$5x - 2x^2 - 6x$ ✓+ $6x$ $= 5x - 2x^2$ ✓	✓ bracket expansion ✓ ans	2
3.3	12 ✓ x^6 ✓ y^{10} ✓	✓ 12 ✓ x^6 ✓ y^{10}	3
			[7]
4.1	$x = \frac{24}{5}$ ✓	✓ numerator ✓ denominator	2
4.2	$-7x + 11x = 22 + 14$ ✓✓ $4x = 36$ $x = 9$ ✓	✓ LHS ✓ RHS ✓ ans	3
4.3	$x^3 = \frac{125}{4} \div 2 = \frac{125}{4} \times \frac{1}{2}$ $x^3 = \frac{125}{8}$ $x = \frac{5}{2}$	✓ divide by 2 ✓ $x^3 = \frac{125}{8}$ ✓ ans	3
4.4	7x = 5x + 14 ✓ x = 7 ✓ 7x + 5x = 12x = 12(7) = 90 sweets ✓	✓ setting up equation ✓ x = 70 ✓ ans	3
			[11]
5.1.1	$\frac{3}{7}$ ✓	✓ ans	1
5.1.2	Number of players passing = $\frac{7}{10}$ ✓ $210 \times \frac{7}{10} = 147$ ✓ 147 × 4,5 × 5 ✓ = 3307,5 Robux ✓	✓ $\frac{7}{10}$ ✓ 147 ✓ 147 × 4,5 × 5 ✓ ans	4
5.2	20% of 66 million = 13,2 million or 13 200 000 ✓	✓ ans	1
5.3	36% of 13,2 = 4,75 million ✓✓ Or 4 752 000.	✓CA 36% of prev answer ✓ ans	2
5.4	$T_n = 6n - 1$ ✓ $1000 = 6n - 1$ ✓ ∴ n = 166,833… ∴ 166 items. ✓	✓ finding rule ✓ = 1000 ✓ rounding down to 166	3
			[11]

Question	Answer	Mark allocation	Marks
6.1	a = +5 ✓ b = 6 ✓ c = $\frac{p}{3} + 5$ ✓	✓ a ans ✓ b ans CA ✓ c ans CA	3
6.2.1	<table><tr><td>x</td><td>−1</td><td>0</td><td>1</td></tr><tr><td>y</td><td>−1</td><td>1</td><td>3</td></tr></table>	✓✓✓ for x-values −1; 0; 1	3
6.2.2	(−1; −1) ✓ (0; 1) ✓ (1; 3) ✓	✓✓✓ CA	3
6.2.3		✓ straight line through points ✓ correct points CA −1 for not using a ruler	2
6.3.1	20; 27; 35	✓ 3 correct ans	1
6.3.2	230 ✓	✓✓ any valid method (trial and error) ✓ ans 230	3
			[14]

GRADE 8 – MATHS PAPER 1

MEMORANDUM

11 NOVEMBER 2024

QUESTION 1: Multiple Choice

1.1.	A	• accuracy	(1)
1.2.	A	• accuracy	(1)
1.3.	C	• accuracy	(1)
1.4.	D	• accuracy	(1)
1.5.	A	• accuracy	(1)
1.6.	A	• accuracy	(1)
1.7.	B	• accuracy	(1)
1.8.	A	• accuracy	(1)
1.9.	B	• accuracy	(1)
1.10.	D	• accuracy	(1)

QUESTION 2: Functions and Graphs

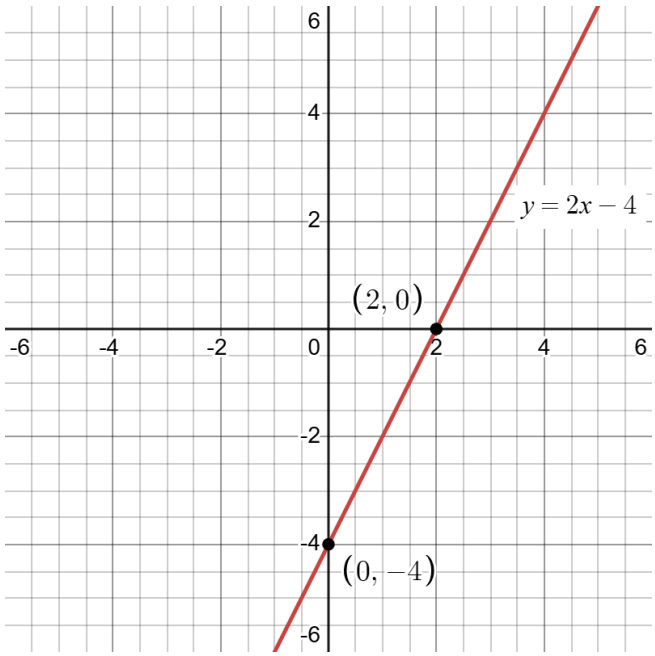
2.1.1.

x	-2	0	**2**	2	**14**
y	**-8**	**-4**	0	**0**	24

- first four values
- (14; 24)

(2)

2.1.2.



- x-int (C.A.)
- y-int (C.A.)
- shape/accuracy
- label or coordinates

(4)

[6]

QUESTION 3: Numbers, Operations and Relations

3.1.	3.1.1.	$\frac{3}{4} > \frac{9}{15}$	• greater than	(1)
	3.1.2.	$-5{,}12 < -2{,}15$	• less than	(1)
3.2.	3.2.1.	120 $= 2 \times 60$ $= 2 \times 2 \times 30$ $= 2 \times 2 \times 2 \times 15$ $= 2 \times 2 \times 2 \times 3 \times 5$ $= 2^3 \times 3 \times 5$	• any acceptable method • $2 \times 2 \times 2 \times 3 \times 5$ • Exponential form (C.A)	(3)
	3.2.2.	$120 = 2^3 \times 3 \times 5$ $\therefore 120k = 2^4 \times 3^2 \times 5^2$ $\therefore k = 2 \times 3 \times 5$ $= 30$	• 2 (C.A) • 3×5 (C.A)	(2)
3.3.	3.3.1.	$-5 + 3 \times (2^3 - 14)$ $= -5 + 3 \times (8 - 14)$ $= -5 + 3 \times (-6)$ $= -5 - 18$ $= -23$	• $2^3 = 8$ • -6 (C.A) • -18 (C.A) • -23 (C.A)	(4)
	3.3.2.	$\frac{2^0}{3} + \frac{14}{\sqrt{49}}$ $= \frac{1}{3} + \frac{14}{7}$ $= \frac{1}{3} + 2$ $= \frac{1}{3} + \frac{6}{3}$ $= \frac{7}{3}$	• $2^0 = 1$ • $\sqrt{49} = 7$ • $\frac{14}{7} = 2$ • $\frac{7}{3}$ (C.A) (also accept mixed number of $2\frac{1}{3}$)	(4)
3.4.	3.4.1.	$2 : (2 + 3 + 1)$ $= 2 : 6$ $= 1 : 3$	• 6 (total amount) • $1 : 3$	(2)
	3.4.2.	$2 : 3 : 1$ mix, having costs of 30:20:15 $2 \times 30 = 60$ for strawberries $3 \times 20 = 60$ for blueberries $1 \times 15 = 30$ for kiwis $\therefore$ strawberries and blueberries	• multiplication • strawberries and blueberries	(2)

3.5.	3.5.1.	$\frac{240\text{km}}{80\text{km/h}} = 3 \text{ hours}$	• 3 hours	(1)
	3.5.2.	$\frac{240\text{km}}{20\text{km}} = 12 \text{ stops}$ $12 \text{ stops} \times 3 \text{ minutes} = 36 \text{ minutes}$ Total time = 3 hours and 36 minutes	• 12 stops • 36 minutes (additional time) • 3 hours and 36 minutes	(3)
	3.5.3.	3 hours 36 min $\Rightarrow$ 216 minutes 3 hours $\Rightarrow$ 180 minutes $\therefore \frac{216}{180} = 120\%$	• Conversion to minutes (C.A) • 120% (C.A)	(2)
3.6.	**One tap** fills a whole tank in 12 minutes, therefore **four taps** will fill it in 3 minutes. **OR** Four taps fill **half a tank** in $\frac{6}{4}$ minutes, therefore they fill the **whole tank** in $2\left(\frac{6}{4}\right) = 3$ minutes.		• rate conversion • 3 minutes • rate conversion • 3 minutes	(2)
				[27]

QUESTION 4: Algebraic Expressions

4.1.	4.1.1.	$-4x + 9y - x - 2y$ $= -5x + 7y$	• $-5x$ • $+7y$	(2)
	4.1.2.	$-4a^3 \times 3a^2b^4$ $= -12a^5b^4$	• -12 • a^5b^4	(2)
	4.1.3.	$\frac{(2x^4)^2}{2(x^2)^3}$ $= \frac{4x^8}{2x^6}$ $= 2x^2$	• 4 • x^8 • x^6 • $2x^2$ (C.A)	(4)
4.2.	$2(a-4b) - (a+2b)$ $= 2a - 8b - a - 2b$ $= a - 10b$ Subtract $a + 2b$ from twice the value of $a - 4b$.		• $2a - 8b$ • $-a - 2b$ • $a - 10b$ (C.A)	(3)
				[11]

QUESTION 5: Algebraic Equations

5.1.	5.1.1.	$x+3=-10$ $x=-13$	• $x=-13$	(1)
	5.1.2.	$2(4+3x)=20$ $8+6x=20$ $6x=12$ $x=2$	• distribution • simplify like terms • $x=2$ (C.A)	(3)
	5.1.3.	$8-3(x-7)=x+5$ $8-3x+21=x+5$ $-3x+29=x+5$ $-4x=-24$ $x=6$	• $-3x$ (distribution) • $+21$ (distribution) • Simplify like terms • $x=6$ (C.A)	(4)
5.2.	LHS: $4x+1$ $=4\left(-\frac{1}{2}\right)+1$ $=-2+1$ $=-1$ RHS: $2(x-1)+2$ $=2\left(-\frac{1}{2}-1\right)+2$ $=2\left(-\frac{3}{2}\right)+2$ $=-1$ LHS = RHS $\therefore x=-\frac{1}{2}$ is a solution to the equation		• substitution • isolated LHS and RHS • conclusion *(substitute into equation: 1/3 max)* *(solve equation: full marks)*	(3)
5.3.	5.3.1.	Sale Price $=3(\text{R}150-\text{R}20)+\text{R}10$ $=3(\text{R}130)+\text{R}10$ $=\text{R}390+\text{R}10$ $=\text{R}400$ What is the sale price of three novels after this discount for members?	• R130 (initial subtraction) • R400 (accuracy) *(Answer only: 2/2)*	(2)
	5.3.2.	$y=130x+10$	• $130x$ • $+10$	(2)
	5.3.3.	$790=130x+10$ $780=130x$ $x=6$	• $y=\text{R}790$ • Simplify (C.A) • $x=6$ (C.A)	(3)

5.4.	The difference between the first two heights is equivalent to 3 stacked cups. $\therefore 3d = 34 - 19$ $3d = 15$ $d = 5$ Taking this distance away from the height in the second image, gives us the height of a single cup: $\therefore h = 19 - 5$ $h = 14\,(\text{cm})$	• Subtracting heights • $d = 5$ (single difference) • 14 cm	(3)
			[21]

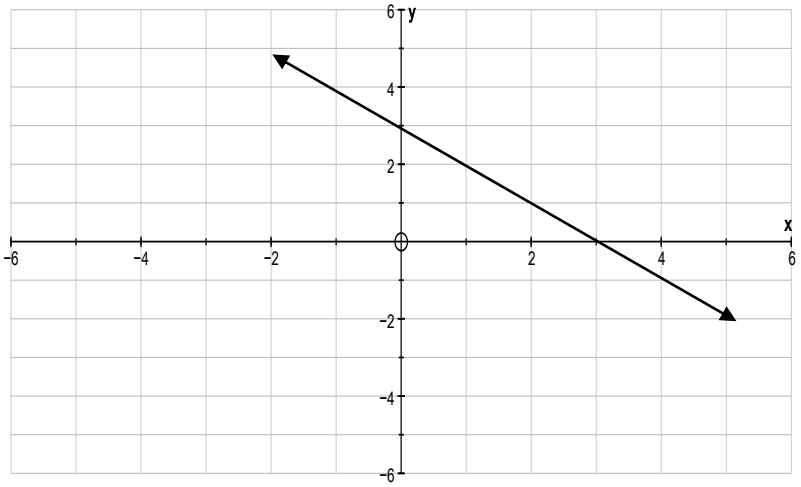
TOTAL: 75 marks

GRADE 8 MATHEMATICS NOVEMBER EXAM

PAPER 1 – MEMO **TOTAL : 75**

QUESTION 1			
1.1.1	B	1.6 A	
1.1.2	B	1.7 C	
1.2	A	1.8 A	
1.3	A	1.9 C	
1.4	B	1.10 D	
1.5	A	1.11 C	**[12]**
QUESTION 2			
2.1	$-5;\ -1\frac{1}{2};\ -\frac{1}{8}$	• -5 smallest • Rest	(2)
2.2.1	$308 = 2\times2\times7\times11$ $56 = 2\times2\times2\times7$	• Method (irrespective of error) • Primes of 308 • Primes of 56	(3)
2.2.2	$HCF = 2^2\times7 = 28$	• 4 • 7 OR answer only 28	(2)
2.3.1	Cheslin $\frac{80m}{7,5s} = 10,67m/s$ Wayde $\frac{400m}{43,03s} = 9,3m/s$	• Ratio • Answer 10.67 • Ratio • Answer 9.3	(4)
2.3.2	Cheslin	• Cheslin	(1)
2.4	$715 = 5\times13\times11$ $5+13+11 = 29$	• 5; 13; 11 • Answer = 29 OR answer only	(2)
2.5.1	$7-3\left[-2\times9+(4\div2\times3)\right]$ $=7-3\left[-18+6\right]$ $=7-3[-12]$ $=7+36$ $=43$	• Exponents and cube root • Brackets ie. -12 • 43 (CA) IF DID NOT FOLLOW BEDMAS THEN BD!	(3)
2.5.2	$\frac{-10}{3}\div\frac{13}{6} = \frac{-10}{3}\times\frac{6}{13} = \frac{-20}{13}$	• Improper • Tip & times • Answer	(3)
2.6	Row=1; $A=-4$	• A = -4	(1)
			[21]

QUESTION 3			
3.1.1	x^6	• answer	(1)
3.1.2	$9x^2y^6$	• 9 • Exponents	(2)
3.1.3	$\frac{-y^2}{6}$	• Negative • 6 in denominator • Y squared numerator	(3)
3.1.4	$-x^3$	• Negative • Exponent	(2)
3.2	$(x+3)+x=3x$	• x+3 • 3x • Equation	(3)
3.3.1	$x+6x^2$	• x • $6x^2$	(2)
3.3.2	$9x+6-5x=4x+6$	• $9x+6$ distributive law • $4x+6$ simplify (CA)	(2)
3.3.3	$2x+6+8x-4=10x+2$	• $2x+6$ distributive law • $8x-4$ distributive law • $10x$ (CA) • 2 (CA)	(4)
3.3.4	$4x^2-3x^2=x^2$	• $4x^2$ squaring • x^2 adding like terms	(2)
			[21]
QUESTION 4			
4.1.1	$3x-27=-2$ $3x=25$ $x=\frac{25}{3}$	• $3x=25$ • $x=\frac{25}{3}$ (CA)	(2)
4.1.2	$2(x-1)-12=-2(3+x)$ $2x-2-12=-6-2x$ $2x+2x=-6+2+12$ $4x=8$ $x=2$	• $2x-2$ • $-6-2x$ • $4x=8$ (CA) • $x=2$	(4)
4.1.3	$\frac{15+3x}{3}=-5$ $15+3x=-15$ $3x=-30$ $x=-10$ OR $5+x=-5$ $x=-10$	• $15+3x=-15$ • $3x=-30$ • $x=-10$ (CA) OR • 5; then x; then answer	(3)

<table>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>4.1.4</td><td>$5^x = 5(25)$
$5^x = 5^3$ OR $5^x = 125$
$x = 3$ $x = 3$</td><td>• X = 3</td><td>(1)</td></tr>
<tr><td>4.2</td><td>$12x - 9 = 3(4x - 3)$
$a = 3 \quad b = -3$
$a - b = 3 - (-3) = 6$</td><td>• 6 answer ONLY</td><td>(2)</td></tr>
<tr><td></td><td></td><td></td><td>[12]</td></tr>
<tr><td>QUESTION 5</td><td></td><td></td><td></td></tr>
<tr><td>5.1.1</td><td>7</td><td>• 7</td><td>(1)</td></tr>
<tr><td>5.1.2</td><td>$1;3;5;7;.....$
$T_n = 2n - 1$</td><td>• Sequence
• 2n
• $T_n = 2n - 1$</td><td>(3)</td></tr>
<tr><td>5.1.3</td><td>$T_{21} = 2(21) - 1 = 41$</td><td>• Subs 21
• Answer</td><td>(2)</td></tr>
<tr><td>5.2</td><td>
<table>
<tr><td>x</td><td>-2</td><td>0</td><td>2</td><td>4</td></tr>
<tr><td>y</td><td>5</td><td>3</td><td>1</td><td>-1</td></tr>
</table>
• Table values
• Points on graph
• joined
$y = -x + 3$


</td><td>(3)</td></tr>
<tr><td></td><td></td><td></td><td>[9]</td></tr>
</table>

Grade 8	Bergvliet High School	November 2025
Time: 1 hour and 15 minutes	Mathematics	Marks: 60
Examiner: Mr D.Sinclair	**FINAL EXAM**	**Moderator: Mr S. Cooppan**
	PAPER 2	

INSTRUCTIONS AND INFORMATION

- If the learner answers a question TWICE, only mark the FIRST attempt.
- If the learner has crossed out an attempt of a question and not redone the question, mark the crossed out version.
- Consistent accuracy (CA) applies in ALL aspects of the marking guideline.
  Stop marking at the second calculation error.
- NOTE: Consistent accuracy (CA) does NOT apply in cases of a breakdown.
- If the learners presents any extra solution when reading from a graph and table then penalise for every extra item presented.
- As a general marking principle, if a learner has incurred one mistake and there is evidence of sound Mathematics thereafter, then that candidate should lose ONE mark only.

Question 1

Q3	ANSWER	DESCRIPTORS	MARKS
1.1.1	C	1A correct option	(1)
1.1.2	C	1A correct option	(1)
1.1.3	D	1A correct option	(1)
			[3]

QUESTION 2

Q2	ANSWER	DESCRIPTORS	MARKS
2.1	$\frac{1}{2}x + 20° = 80°$ $vert.opp\ \angle's =$ $\frac{1}{2}x = 60°$ $\frac{\frac{1}{2}x}{\frac{1}{2}} = \frac{60°}{\frac{1}{2}}$ $x = 120°$ $y = 100°$ $\angle's\ on\ straight\ line = 180°$	✓ $vert.opp\ \angle's =$ ✓ Divide by 0.5 ✓ $x = 120°$ ✓$y = 100°$ ✓$\angle's\ on\ straight\ line$	(5)
2.2	$6a - 40° + 2a + 20° = 180°$ $co - int\ \angle's, KL \parallel MN$ $8a - 20 = 180°$ $8a = 200°$ $a = 25°$	✓ Step ✓ $co - int\ \angle's$ ✓ Answer	(3)
2.3.1	$x = 42°$ $alt\ angles, AC \parallel BD$	✓ Answer ✓ Reason	(2)
2.3.2	$\hat{A} = 102°$ $opp\ \angle's\ in\ parralellogram$ $\hat{B}_2 = 102°$ $corresponding \angle's,\ AC \parallel BD$	✓ A and Reason ✓$\hat{B}_2 = 102°$ ✓ Reason	(3)
			[12]

QUESTION 3

Q3	ANSWER	DESCRIPTORS	MARKS
3.1	$x - 20° + x + 3x + 40° = 180°$ Sum of $\Delta = 180°$ $5x = 180 - 20$ $5x = 160$ $x = 32$	✓ Step ✓ Reason ✓ Answer	(3)
3.2	$R_1 = 180° - 90° - 56° = 34°$ Sum of $\Delta = 180°$ $R_1 + R_2 + R_3 = 180°$ $\angle' s\ on\ straight\ line$ $R_3 = 180° - 34° - 85°$ $R_3 = 61°$	✓ Step ✓ Sum of $\Delta = 180°$ ✓ $\angle' s\ on\ str.line$ ✓ Answer	(4)
3.3	Congruent - A and D also B and C Similar - B and C	✓ A correct values ✓ A correct values	(2)
			[9]

QUESTION 4

Q4	ANSWER	DESCRIPTORS	MARKS
4.1	Reflection over the x-axis	✓ x-axis	(1)
4.2	A	✓ correct values	(1)
4.3	D	✓ correct values	(1)
4.4	Translate 10 units left and 4 units down	✓ no rotation	(1)
			[4]

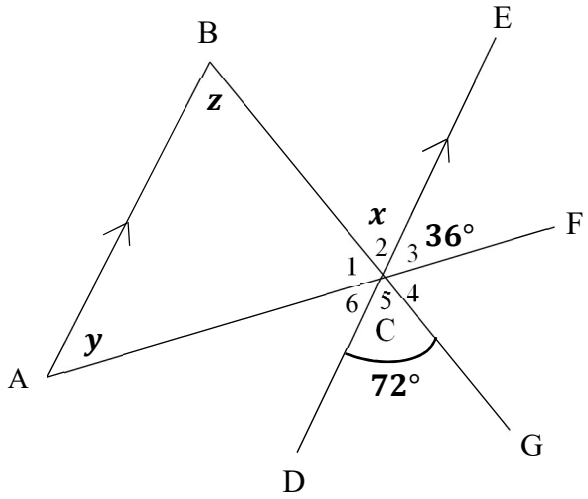
QUESTION 5

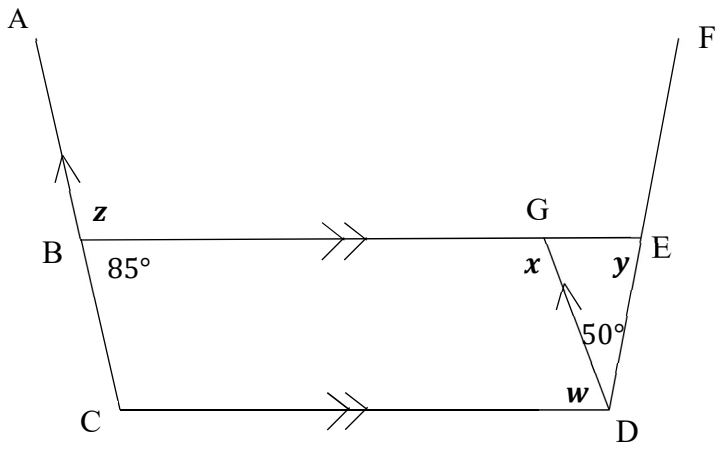
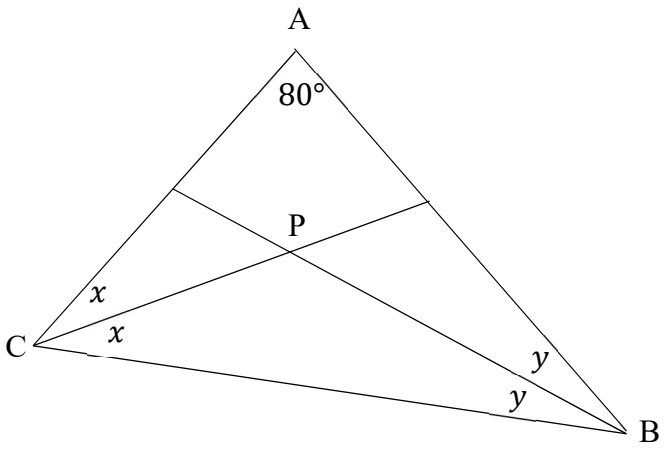
Q5	ANSWER	DESCRIPTORS	MARKS
5.1.1	$FC^2 = 17^2 - 8^2$ Pythagoras $FC^2 = 289 - 64$ $\sqrt{FC} = \sqrt{225}$ $FC = 15cm$	✓ Reason $\checkmark\sqrt{225}$ ✓ 15cm	(3)
5.1.2	$BE = FC = 15cm$ $EF = \frac{1}{3}(15)$ $EF = 5cm$	$\checkmark BE = 15cm$ CA(5.1.1) ✓ Answer	(2)
5.2	$20 + 10 + 9 + 6 + 11 + 4 = 60cm$	✓ 11 & 4 ✓ answer	(2)
5.3	$8 \times 24 = 192cm^2$ $\frac{1}{2} \times 10 \times 8 = 40cm^2$ $192 - 40 = 152cm^2$	✓ Area of rectangle ✓ Area of triangle ✓ Difference in two ✓ Answer	(4)
5.4.1	$650 \div 100 = 65cm$	✓ $\div 100$ ✓ Answer	(2)
5.4.2	$65 \times 50 + 80(75 + 75 + 65)$ $3250cm + 17\,200cm = 20\,450cm^2$	✓ base, ✓ height ✓ length ✓ Answer	(4)
5.4.3	Volume : $\frac{1}{2}(65 \times 50) \times 80 = 130\,000cm^3$ $130\,000 \times 0{,}20 = R26\,000$ His statement is invalid.	✓ $\checkmark\frac{1}{2}(65 \times 50) \times 80$ ✓ $130\,000cm^3$ ✓ multiply by 0,2 ✓ R26 000 ✓ Opinion	(6)
			[22]

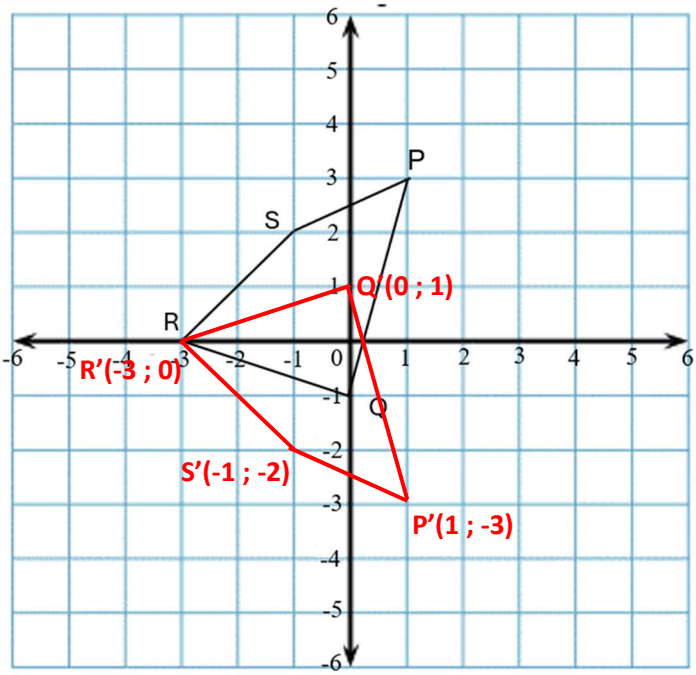
QUESTION 6

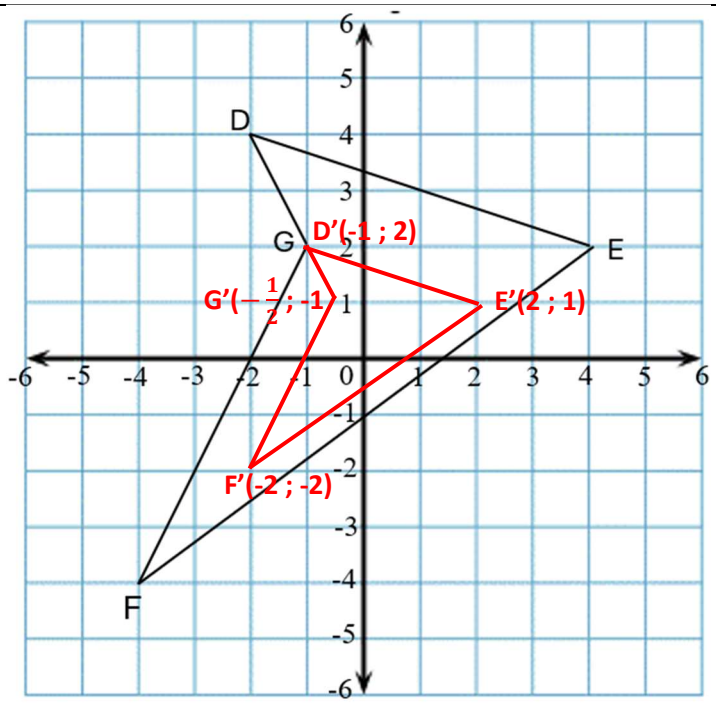
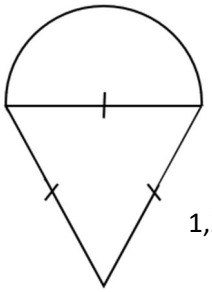
<table>
<tr><th>Q6</th><th>ANSWER</th><th>DESCRIPTORS</th><th>MARKS</th></tr>
<tr><td>6.1</td><td>$\frac{411}{30} = 13{,}7$</td><td>✓ 413
✓ 13,7</td><td>(2)</td></tr>
<tr><td>6.2</td><td>13</td><td>✓</td><td>(1)</td></tr>
<tr><td>6.3</td><td>18 – 10 = 8</td><td>✓ 18-10
✓ 8</td><td>(2)</td></tr>
<tr><td>6.4</td><td><table><tr><td>Class Interval</td><td>Tally</td><td>Frequency</td></tr><tr><td>10-11</td><td>//</td><td>2</td></tr><tr><td>12-13</td><td>//// //// //</td><td>12</td></tr><tr><td>14-15</td><td>//// ////</td><td>9</td></tr><tr><td>16-17</td><td>//// /</td><td>6</td></tr><tr><td>18-19</td><td>/</td><td>1</td></tr><tr><td></td><td>Total</td><td>30</td></tr></table></td><td>✓ Tallies correct
✓ Frequency correct
✓ Total</td><td>(3)</td></tr>
<tr><td>6.5</td><td>$\frac{7}{30} \times 100 = 23{,}33\%$</td><td>✓$\frac{7}{30}$
✓ 23,33%</td><td>(2)</td></tr>
<tr><td></td><td></td><td></td><td>[10]</td></tr>
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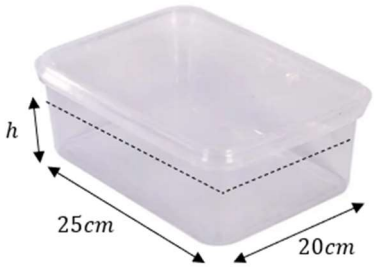
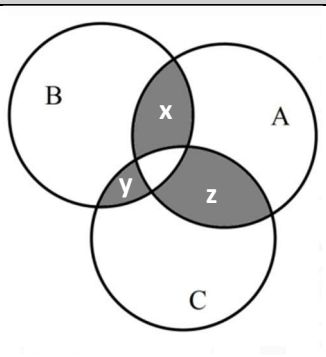
Total Marks : 60 Marks

Question	Answer	Mark Allocation	Marks
1.1.	Free State	✓ *as long as FS is there, they can get 1 mark	1
1.2.	Mean $= \frac{797}{9}$ $= 88{,}56\%$	✓sum ✓÷ 9 ✓ans.	3
1.3.	$104 - 65$ $= 39$	✓ max ✓ min ✓ ans. (CA)	3
1.4.	55 ; 77 ; 82 ; 91 ; 96 ; 97 ; 99 ; 100 ; 100 ∴ median = 96	✓ arrange ✓ans.	2
1.5.	% change $= \frac{55-74}{74} \times 100$ $= -25{,}68\%$ or $25{,}68\%$ decrease	✓subtract ✓÷ 74 ✓ans.	3
TOTAL = 12 MARKS			
QUESTION 2 – Penalise ***once*** for no parallel lines; if ststaement is incorrect, no reason mark can be awarded.			
2.1.			
2.1.1.	$x = 72°$ (vert. opp. ∠'s =)	✓S ✓R	2
2.1.2.	$y = 36°$ (corresp. ∠'s; $AB \parallel DE$ or $\parallel lines$)	✓S ✓R	2
2.1.3.	$z = 72°$ (alt. ∠'s; $AB \parallel DE$ or $\parallel lines$) OR (corresp. ∠'s; $AB \parallel DE$ or $\parallel lines$) OR (ext. ∠ of Δ)	✓S ✓R	2

2.2.				
2.2.1.	$w = 85°$	(opp. ∠'s of parm. =)	✓S ✓R	2
2.2.2.	$x = 95°$	(co-int. ∠'s; $BG \parallel CD$)	✓S ✓R	2
2.2.3.	$y = 45°$	(ext. ∠ of Δ)	✓S ✓R	2
2.3.4.	$z = 95°$	(∠'s on str. line)	✓S ✓R	2
		OR (alt. ∠'s; $AB \parallel DG$)		
TOTAL = 14 MARKS				
3.				
	In ΔABC:			
	$2x + 2y + 80° = 180°$	(sum of ∠s in Δ)	✓$2x + 2y + 80° = 180°$	
	$\therefore 2x + 2y = 100°$			
	$\therefore x + y = 50°$		✓$x + y = 50°$	
	In ΔPBC:			
	$x + y + C\widehat{P}B = 180°$	(sum of ∠s in Δ)		
	$\therefore C\widehat{P}B = 130°$		✓ans.	
TOTAL = 3 MARKS				

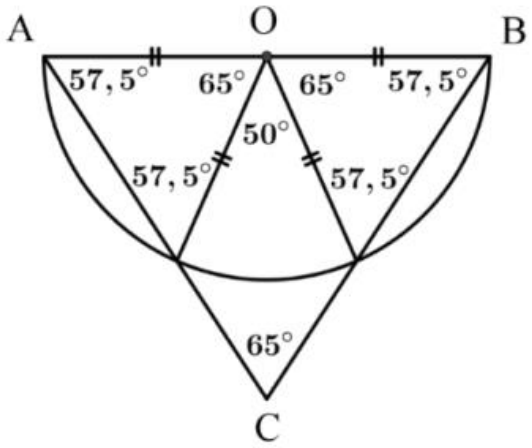
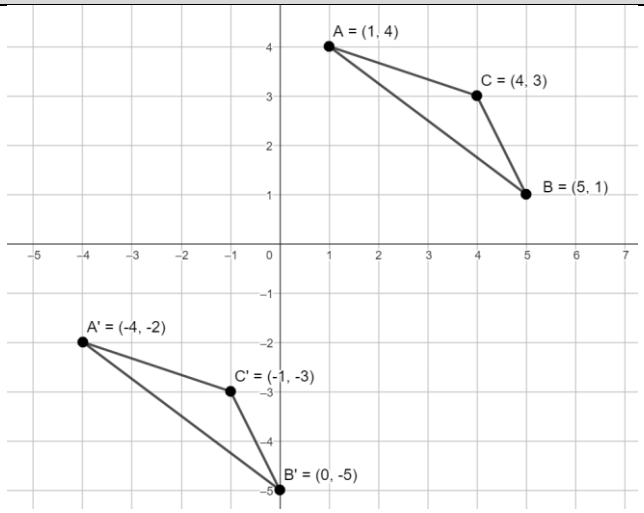
4.1.1.	The shapes are BOTH congruent and similar. The shapes are identical/the sides lengths are equal	✓both ✓reason (any reasonable justification)	2
4.1.2.	The shapes are SIMILAR The shapes are in proportion to each other with regards to their side lengths/the larger shape is 3x bigger than the smaller shape	✓similar ✓reason (any reasonable justification)	2
4.2.	Missing length = 12cm Perimeter = $2(30) + 4(12) + 18$ $= 126cm$	✓12cm ✓ans.	2
TOTAL = 6 MARKS			
5.1.1.	$S(-1; 2)$	✓x ✓y	2
5.1.2.		✓P'$(1; -3)$ ✓Q' $(0; 1)$ ✓R' $(-3; 0)$ ✓S' $(-1; -2)$ -1 if coordinates aren't labelled	4

5.2.		**5.2.1.** ✓D' $(-1; 2)$ ✓E' $(2; 1)$ ✓F' $(-2; -2)$ ✓G' $(-\frac{1}{2}; 1)$ **5.2.2.** Correct image drawn	4 1
TOTAL = 11 MARKS			
6.1.			
	Area of semi-circle $= \frac{1}{2}\pi(6)^2$ $= 18\pi\ m^2$ Height of triangle: $(12)^2 = h^2 + (6)^2$ (pythag) $\therefore h^2 = (12)^2 - (6)^2$ $\therefore h = 10{,}39m$ Area of triangle $= \frac{1}{2}(12)(10{,}39)$ $= 62{,}35m^2$ Total area $= 118{,}90m^2$	✓radius = 6m ✓area of semi-circle ✓pythag + reason ✓height of triangle ✓area of triangle ✓ans.	6

6.2.		*conversion error – can get max 3 out of 4	
	$3{,}5l = 3500ml = 3500cm^3$ $\therefore 3500 = 25 \times 20 \times h$ $\therefore h = 7cm$	✓conversion ✓sub LHS ✓sub RHS ✓h	4
TOTAL = 8 MARKS			
7	 $120 \times \frac{1}{4} = 30$ $120 \times \frac{1}{5} = 24$ $120 \times \frac{1}{6} = 20$ $x + z = 30\,; x + y = 24\,; y + z = 20$ $\therefore 2x + 2y + 2z = 74$ $\therefore x + y + z = 37cm^2$	✓ areas ✓ equation = 74 ✓ ÷ 2 ✓ans.	
TOTAL = 8 MARKS			
GRAND TOTAL = 60 MARKS			

Grade 8 Paper 2 – MEMO

QUESTION	ANSWER	MARK ALLOCATION	MARKS	LEVEL
1.1.	$29^\circ C$	✓	1	K
1.2.	$22^\circ C$	✓	1	K
1.3.	$\frac{322}{14}$ $= 23^\circ C$	✓÷ ✓ans.	2	R
1.4.	$19;19;21;21;22;22;22;23;23;24;24;26;27;29$ $\therefore Median = \frac{22+23}{2}$ $= 22,5^\circ C$	✓ordered data ✓÷ 2 ✓ans.	3	R
1.5.	$29-19$ $=10^\circ C$	✓29 – 19 ✓ans.	2	R
TOTAL = 9 marks				
2.1.1.	$x+29^\circ = 360^\circ$ $(\angle's\ round\ a\ pt.)$ $\therefore x = 331^\circ$	✓reason ✓ans.	2	K
2.1.2.	$x = 58^\circ - 31^\circ$ $(ext.\angle of\ \Delta)$ $\therefore x = 27^\circ$ $y = 122^\circ$ $(\angle's\ on\ str.line)$ *OR* $(sum\ \angle's\ in\ \Delta)$	✓reason for x ✓x ✓Reason for y ✓y	4	R
2.1.3.	$x = 40^\circ$ $(corresp.\angle's;\|\|lines)$ $y = 54^\circ$ $(vert.opp.\angle's=)$ *OR* $(ext.\angle of\ \Delta)$ $z = 54^\circ$ $(alt.\angle's;\|\|lines)$ *OR* $(corresp.\angle's;\|\|lines)$	✓✓x with reason ✓✓y with reason ✓✓z with reason -1 if no ‖ lines	6	R
2.2.1.	$2x + 50^\circ + 90^\circ = 180^\circ$ $(\angle's\ on\ str.\ line)$ $\therefore 2x = 40^\circ$ $\therefore x = 20^\circ$	✓set up equation ✓reason ✓ans.	3	R
2.2.2.	$AQB + 29^\circ = 180^\circ$ $(co-int.\angle's;\|\|lines)$ $\therefore AQB = 151^\circ$	✓reason ✓ans.	2	K

2.2.3.	*In* ΔACQ *and* ΔADR : 1) A_1 *is a common / shared angle* 2) $RDA = QCA$ $(corresp.\angle's;\|\|lines)$ 3) $DRQ = CQA$ $(corresp.\angle's;\|\|lines)$ *OR* $(sum\,of\ \angle's\,in\,\Delta)$	✓$\hat{A}_1$ with reason ✓$R\hat{D}A = Q\hat{C}A$ ✓reason (corresp. $\angle's$) ✓D$\hat{R}Q = C\hat{Q}A$	4	C
2.3.	$OA = OB = OD = OE$ $(radii)$ $AOD = BOE = 65^\circ$ $(given)$ $OAD = ODA = OBE = OEB$ $(\angle's\,opp. = sides)$ $\therefore OAD = ODA = OBE = OEB = 57,5^\circ$ $(sum\angle's\,in\,\Delta)$ $\therefore x = 65^\circ$ $(sum\,of\ \angle's\,in\,\Delta)$  	✓radii ✓$\angle's$ opp. = sides ✓57,5° ✓x	4	PS
TOTAL = 25 marks				
3.1.1.	 	✓A'(-4;-2) ✓B'(0;-5) ✓C'(-1;-3)	3	R
3.1.2.	$A''(-1;4)$	✓-1 ✓4	2	K
3.1.3.	Both. The size of ΔABC has not changed, and so the shapes are identical.	✓Both ✓reason	2	K

3.2.	$a = -2$ $b = 0$	✓a ✓b	2	C
TOTAL = 10 marks				
4.1.	$2\pi r$ $= 2\pi(2)$ $= 12,57m$	✓sub ✓ans.	2	R
4.2.	Base length: $(10,63)^2 - (7)^2$ ($pythag.$) $= \sqrt{63,9969}$ $= 8m$ $Area = \frac{1}{2}(8)(7)$ $= 28m^2$	✓pythag. ✓8m ✓area sub. ✓ans.	4	C
4.3.	$Area\ of\ garden = 15 \times 7$ $= 105m^2$ $Area\ of\ pool = \pi(2)^2$ $= 12,566...m^2$ $Area\ of\ grass = 105 - 12,566... - 28$ $= 64,43m^2$	✓area garden ✓area of pool ✓subtract ✓ans.	4	C
4.4.	$4800cm^2 \div 60cm = 80cm$ $TSA = 2(4800) + 2(60 \times 150) + 2(80 \times 150)$ $= 9600 + 18000 + 24000$ $= 51600cm^2$	✓$80cm$ ✓$2(4800)$ ✓SA of remaining faces ✓ans.	4	C
4.5.	$Perimeter = 24cm$ $\therefore side\ length\ of\ l\arg e\ square = 24 \div 4$ $= 6cm$ $area\ of\ whole\ tile = 6 \times 6$ $= 36cm^2$	✓side length ✓6cm ✓area	3	C
TOTAL = 19 marks				