



**NATIONAL
SENIOR CERTIFICATE**

GRADE 11

NOVEMBER 2022

**MATHEMATICAL LITERACY P2
MARKING GUIDELINE**

MARKS: 100

Symbol	Explanation
M	Method
M/A	Method with accuracy
MCA	Method with consistent accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT/RG/RM	Reading from a table OR Reading from a graph OR Read from a map
F	Choosing the correct formula
SF	Substitution in a formula
J	Justification
P	Penalty, e.g. for no units, incorrect rounding off etc.
R	Rounding off OR Reason
AO	Answer only
NPR	No penalty for rounding

This marking guideline consists of 8 pages.

QUESTION 1 [20]				
Ques.		Solution	Explanation	Topic & Level
1.1	1.1.1	R40,00 ✓✓ RT	2RT correct value (2)	F L1
	1.1.2	Hours: 8 ✓ C Convert 15 min = $15 \div 60$ = 0,25 + 8 = 8,25 hrs. ✓ A	1C divide by 60 1A adding correct values (2)	M L1
1.2	1.2.1	Departure 14h20 Arrive – 11h30 ✓ MA Lapse time = 2h50 min ✓ A	1MA subtraction time 1A simplified time (2)	M L1
	1.2.2	Cost = R50,00 + (R7,00 x R3,00) ✓RT = R50,00 + R21,00 R71,00 ✓ A	1RT correct values 1A answer (2)	F L1
1.3	1.3.1	It is the total length of the sides in a shape. ✓✓ OR It is the distance around the outside of the shape. ✓✓ R Accept any other relevant reason.	2R Explanation (2)	M L1
	1.3.2	Perimeter rectangular diagram = 210 + 210 + 100 + 100 = 620 cm ✓ CA	1MA adding sides 1CA answer (2)	M L1
	1.3.3	Numerical scale or Ratio scale ✓✓ A	2A concept scale (2)	M&P L1
	1.3.4	Every 1 unit on the map represents 100 units in reality. ✓✓ A	2A Explanation (2)	M&P L1
1.4	1.4.1	R44 ✓✓ A	2A correct road (2)	M&P L1
	1.4.2	Provincial roads serve as feeders to the national roads. ✓✓ A OR Provincial roads also serve as trunk roads in areas where there is no national roads. ✓✓ A Accept any relevant explanation.	2A Explanation (2)	M&P L1
			[20]	

QUESTION 2 [30]				
Ques.		Solution	Explanation	Topic & Level
2.1	2.1.1	Bar scale ✓✓ 2A	2A correct scale (2)	M&P L1
	2.1.2	Width of bar (measured) = 2,1 cm ✓ A Length of animal = 15,1 cm ✓ A $2,1 \text{ cm} = 1,9 \text{ m}$ ✓ M $\frac{15,1}{2,1} \times 1,9 \text{ m} = 13,6619 \text{ m} \checkmark \text{ CA}$ $= 13,7 \text{ m} \checkmark \text{ R}$ OR ✓ A $2,1 \text{ cm} = 1,9 \text{ m}$ ✓ A ✓ M $15,1 \text{ cm} = \frac{15,1 \text{ cm} \times 1,9 \text{ m}}{2,1 \text{ cm}}$ $= 13,6619 \text{ m} \checkmark \text{ CA}$ $= 13,7 \text{ m} \checkmark \text{ R}$	1A measured value for bar width 2,1 cm Accept 2 – 2,3 cm 1A measured value diagram for 15,1 cm 1M multiply by 1,9 m 1CA correct value 1R one decimal number 1A measured value for bar width 2,1 cm 1A measured value diagram for 15,1 cm 1M multiply by 1,9 m 1CA correct value 1R one decimal number Mark according to your measured length. (5)	M&P L2
	2.1.3	1 ton = 1 000 kilogram 20 ton = 20 × 1 000 ✓ A $= 20\,000 \text{ kilogram} \checkmark \text{ A}$	1A × 1 000 1A correct value (2)	M L1
2.2		$48\,000 - 30\,000 = 18\,000 \checkmark \text{ MA}$ ✓ A $\text{Percentage illegal fishing} = \frac{18\,000}{30\,000} \times 100$ $= 60\% \checkmark \text{ A}$	1MA Subtracting correct number of tuna 1A × 100 1A correct percentage (3)	F L3

2.3	2.3.1	M9 ✓ RT M18 ✓ RT	2RT correct roads (2)	M&P L1
	2.3.2	N2 ✓ ✓ RT	2 RT (2)	M&P L1
	2.3.3	R75 ✓ ✓ RT	2 RT (2)	M&P L1
	2.3.4	6 provincial roads ✓ ✓ 2A OR R75; R102; R334; R335; R367; R368 ✓ ✓ 2A	2A correct number 2A correct list of roads (2)	M&P L2
	2.3.5	Measured distance : 5 cm ✓ A 5 cm : 13 km ✓ M 5 cm : 1300 000 cm ✓ C $\frac{5 \text{ cm}}{5 \text{ cm}} : \frac{1 \text{ 300 000 cm}}{5 \text{ cm}} \checkmark \text{ S}$ 1 : 260 000 Yes, his statement is valid. ✓ ✓ 2J	1A measured value 1M ratio concept 1C conversion 1S simplify values 2J conclusion (6)	M&P L4
	2.3.6	Time = $\frac{13 \text{ km}}{80 \text{ km /h}} \checkmark \text{ SF}$ = 0,1625 hrs × 60 = 9,75 min ✓ C = 0,75 × 60 = 45 seconds ✓ C Total time = 9 min 45 seconds ✓ S	1SF correct substitution 1C converting hrs to min 1C converting min to seconds 1S simplifying total time (4)	M L2
			[30]	

QUESTION 3 [23]				
Ques.		Solution	Explanation	Topic & Level
3.1	3.1.1	Perimeter = 2 (length + breadth) ✓SF = 2 (8 500 mm + 3 500 mm) = 2 (12 000 mm) ✓ = 24 000 mm ✓	1SF correct values 1S simplification 1CA answer (3)	M L2
	3.1.2	Area of floor = Length × Width ✓ C = 8,5 m × 3,5 m ✓ = 29,75 m ² ✓	1C convert to m 1M multiply 5,8 m with 3,5 m 1CA correct value (3)	M V2
	3.1.3	Volume = length × breadth × height (thickness) = 8,5 m × 3,5 m × 0,1 m ✓ = 2,975 m ³ ✓	2A Reason 1SF substitute correct values 1CA answer for 2,975 m ³ NPR (2)	M L3
	3.1.4	Facing west ✓ and east. ✓	2RT directions (2)	M&P L3

3.2	3.2.1	$\begin{aligned} \text{Area of southern wall} &= 8,5 \text{ m} \times 5 \text{ m} \checkmark \text{ SF} \\ &= 42,5 \text{ m}^2 \checkmark \text{ CA} \end{aligned}$ <p>Dimensions of 1 brick (with mortar)</p> $\begin{aligned} \text{Length} &= 222 + 10 \checkmark \text{ M} \\ &= 232 \text{ mm} \\ \text{Height} &= 73 + 10 \\ &= 83 \text{ mm} \end{aligned}$ <p>Area of 1 brick = length \times height</p> $\begin{aligned} &= 232 \text{ mm} \times 83 \text{ mm} \checkmark \text{ SF} \\ &= 19\,256 \text{ mm}^2 \div 1\,000\,000 \checkmark \text{ C} \\ &= 0,019\,256 \text{ m}^2 \checkmark \text{ CA} \end{aligned}$ <p>No. of bricks = $\frac{\text{Area of the wall in m}^2}{\text{Area of one brick in m}^2}$</p> $\begin{aligned} &= \frac{42,5 \text{ m}^2}{0,019256 \text{ m}^2} \checkmark \text{ SF} \\ &= 2\,207,10 \\ &= 2\,208 \text{ bricks} \checkmark \text{ CA} \end{aligned}$	<p>1C Convert cm to m 1SF correct values 1CA correct value for 42,5 m²</p> <p>1M adding 10 mm</p> <p>1SF correct values 1C divide by conversion factor 1CA for 0,019256 m²</p> <p>1SF correct values</p> <p>1CA number of bricks (9)</p>	M L3
	3.2.2	$\begin{aligned} 10\% \times 2\,208 \text{ bricks} &= 220,8 + 2\,208 \checkmark \text{ M} \\ \text{Total amount of bricks} &\approx 2\,428,8 \\ &\approx 2\,429 \text{ bricks} \checkmark \text{ CA} \end{aligned}$ <p style="text-align: center;">OR</p> $\begin{aligned} 110\% \times 2\,208 &= 2\,428,8 \checkmark \text{ S} \\ &\approx 2\,429 \text{ number of bricks} \checkmark \text{ CA} \end{aligned}$	<p>CA from 3.2.1 1M adding correct no of bricks 1CA total no of bricks</p> <p>1S simplifying correct number of bricks 1CA total number of bricks (2)</p>	M L2
	3.2.3	<p>2 429 total number of bricks (answer to QUESTION 3.2.2) R4,75 price of one brick</p> $\begin{aligned} 2\,429 \times \text{R}4,75 &\checkmark \text{ M} \\ &= \text{R}11\,537,75 \checkmark \text{ CA} \end{aligned}$	<p>1CA total number of bricks 1M price of one brick 1CA total amount (2)</p>	M L4
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QUESTION 4 [27]				
Ques.		Solution	Explanation	Topic & Level
4.1	4.1.1	Scale 1 : 30 \checkmark C $A = \frac{45 \times 1}{30} = 1,5 \text{ cm} \checkmark$ CA \checkmark M \checkmark M $B = \frac{105 \times 1}{30} = 3,5 \text{ cm} \checkmark$ CA	1C conversion to cm 1M divide by 30 1CA value of 1,5 cm 1M using 105 cm 1CA value of 3,5 cm (5)	M&P L4
	4.1.2	Volume = $l \times b \times h$ \checkmark C $= 105 \text{ cm} \times 45 \text{ cm} \times 30 \text{ cm} \checkmark$ SF $= 141\,750 \text{ cm}^3 \checkmark$ CA	1C conversion 1SF substitute correct values 1CA Simplification (3)	M L2
	4.1.3	$1 \text{ cm}^3 = 1 \text{ ml}$ $141\,750 \text{ cm}^3 = 141\,750 \text{ ml} \checkmark$ A 1 litre = 1 000 ml \checkmark M $\frac{141\,750 \text{ ml}}{1\,000 \text{ ml}} = 141,75 \text{ litres}$ $0,9 \times 141,75 = 127,575 \text{ litres} \checkmark$ CA	1A ratio concept 1M divide by 1 000 1CA value of 127,575 litres (3)	M L2
4.2	4.2.1	Actual length = $50,4 \text{ mm} \times 150 \checkmark$ M $= 7\,560 \text{ mm} \div 1\,000 \checkmark$ M $= 7,56 \text{ m} \checkmark$ CA Actual width = $25,6 \text{ mm} \times 150 \checkmark$ M $= 3\,840 \text{ mm} \div 1\,000 \checkmark$ M $= 3,84 \text{ m} \checkmark$ CA	1M \times 150 1M \div 1 000 1CA correct value 1M \times 150 1M \div 1 000 1CA correct value (6)	M L2
	4.2.2	Area of rectangle = length \times breadth $= 7,56 \text{ m} \times 3,84 \text{ m} \checkmark \checkmark$ SF M $= 29,03 \text{ m}^2 \checkmark$ CA	1SF correct values 1M multiply values 1CA answer (3)	M L3

4.3	Probability not winning: $\frac{10\ 000}{10\ 000} - \frac{1000}{10\ 000}$ $\checkmark A$ $= \frac{9\ 000}{10\ 000} \times 100$ $\checkmark A$ $= 90\% \checkmark A$	1A numerator 1A denominator 1A for 90% (3)	P L2
4.3.1	Unlikely $\checkmark \checkmark A$	2A Explanation (2)	P L1
4.3.2	10% : 90 % $\checkmark A$ 1 : 9 $\checkmark A$	1A ratio concept 1A simplified values (2)	P L1
		[27]	
		TOTAL: 100	