



**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

JUNE 2021

**MATHEMATICAL LITERACY P2
MARKING GUIDELINE
(EXEMPLAR)**

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 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 5 pages.

QUESTION 1 [20]			
Ques.	Solution	Explanation	Level
1.1.1	$547 \times 1\,000 \checkmark$ $= 477\,000 \text{ m} \checkmark$	1 MA correct values 1 correct answer (2)	L1 M&P
1.1.2	N7 \checkmark N14 \checkmark	1 A 1 A (2)	L1 M&P
1.1.3	5 $\checkmark\checkmark$	2 A (2)	L1 M&P
1.2.1	Distance around a figure $\checkmark\checkmark$ OR Sum of the sides of a figure $\checkmark\checkmark$	2 A correct definition (2)	L1 M
1.2.2	$9 + 13 + 12 + 14 \checkmark$ $= 48 \text{ cm} \checkmark$	1 MA adding correct values 1 correct answer (2)	L1 M
1.2.3	9 : 14 $\checkmark\checkmark$	1 A correct values 1 M as a ratio (2)	L1 M
1.2.4	$13 - 9 \checkmark$ $= 4 \checkmark$	1 A correct values 1 M subtraction (2)	L1 M
1.3.1	$42,2 \times 100\,000 \checkmark$ $= 4\,220\,000 \text{ cm} \checkmark$	1 C 1 correct answer (2)	L1 M
1.3.2	$4,7 \times 60 \checkmark$ $= 282 \text{ minutes} \checkmark$	1 M multiplying by 60 1 correct answer (2)	L1 M
1.3.3	$0,75 \times 42,2 \checkmark$ $= 31,65 \checkmark$	1 MA multiplying 1 correct answer (2)	L1 M

QUESTION 2 [30]			
Ques.	Solution	Explanation	Level
2.1.1	South West ✓✓ North East ✓✓A	2A First direction 2A Second direction (4)	L2 M&P
2.1.2	Scale 15 cm ✓ = 200 km Map distance = 11,8 cm ✓ 15 cm = 200 km 11,8 = 200 x 11,8 ✓ = 2 360 / 15 = 157,3 km ✓	1A Distance on map 1A Distance on scale 1M Multiplying by 200 and dividing by 15 1CA Actual distance in km (4)	L3 M&P
2.1.3	Scale 15 cm : 200 km 15 cm : 20 000 000 cm ✓ 1 : 1 333 333,333 ✓ 1 : 1 000 000 ✓	CA from 2.1.2 1C mm to km 1S Simplification 1R Unit scale (3)	L3 M&P
2.1.4	Japan was the host country ✓✓ OR The other countries were not the host countries ✓✓A	2A Reason (2)	L4 M&P
2.1.5	Russia ✓✓	2 A correct country (2)	L1 M&P
2.2.1	Clanwilliam and Citrusdal = 214 -161 OR 386 -333 ✓ = 53 km = 53 km ✓ Piketburg and Malmesbury = 495 -430 OR 117 -52 = 65 km = 65 km ✓ Distance not equal ✓ Map not drawn to scale ✓	MA Subtracting correct values 1 CA Answer 1 CA Correct answer 1 Conclusion 1 Reason (5)	L4 M&P
2.2.2	From Vanrhynsdorp move south on the N7 ✓ Pass Clanwilliam and Citrusdal Turn left on R44 ✓ Pass Tulbagh and move forward till you reach Ceres ✓	3 A giving clear directions to Ceres (3)	L2 M&P
2.2.3	2/5 ✓✓	1 A numerator 1 A denominator (2)	L2 Prob
2.2.4	Distance = 495 km ✓ Speed = $\frac{495}{4,5}$ ✓ = 110 km /hr ✓ He is within the accepted speed limit ✓	1 A correct distance 1 C converting to hours 1CA speed 1 O (5)	L4 M&P

QUESTION 3[26]			
Ques.	Solution	Explanation	Level
3.1.1	$30\,000 \text{ litres} = \frac{30\,000}{1\,000}$ $= 30\text{m}^3 \checkmark C$ <p>Volume = $\pi \times \text{radius} \times \text{radius} \times \text{depth}$</p> $30\text{ m}^3 = 3,142 \times 2,4 \text{ m} \times 2,4 \text{ m} \times \text{depth} \checkmark SF$ $30\text{ m}^3 = 18,09792 \times \text{depth} \checkmark S$ $\text{Depth} = 30/18,09792$ $= 1,667 \checkmark CA$ $= 2 \text{ m} \checkmark R$	1C Litres to m^3 1C Cm to m 1A Radius 1SF Substitute correct values 1S Simplification 1CA Depth 1R Rounding (7)	L3 M
3.1.2	$10\,000 \text{ litres} = 40\text{g}$ $30\,000 \text{ litres} = \frac{30\,000}{10\,000} \times 40 \checkmark MA$ $= 120 \text{ g per day} \checkmark CA$ <p>For March = $120 \times 31 \checkmark MA$</p> $= 3\,720 \text{ g}$ <p>In kg = $\frac{3\,720}{1\,000}$</p> $= 3,72 \text{ kg} \checkmark C$ <p>10 kg will be enough $\checkmark O$</p>	1MA Calculating grams per day 1CA Grams 1MA Multiplying by 31 1C Convert to kg 1O Enough (5)	L4 M
3.1.3	$\text{Diameter of fence} = 4,8 \text{ m} + 2 \text{ m} + 2 \text{ m}$ $= 8,8 \text{ m} \checkmark A$ <p>Circumference of the fence = $\pi \times \text{diameter}$</p> $= 2 \times 3,142 \times 4,4 \text{ m} \checkmark SF$ $= 27,6496 \text{ m} \checkmark CA$ <p>Costs = $27,6496 \text{ m} \times 125$</p> $= R3\,456,20 \checkmark CA$	1A Diameter of fence 1SF Substitute correct values 1CA Circumference of fence 1CA Cost for labour (4)	L3 M&F
3.2.1	10,4 inches $\checkmark \checkmark RT$	1RT value of length (2)	L1 M
3.2.2	$\text{Area of A} = \text{length} \times \text{width}$ $= 10,4 \text{ inches} \times 18,796\text{cm} \checkmark RT$ $= (10,4 \times 2,54) \times 18,796 \checkmark C$ $= 26,416 \times 18,796 \checkmark M$ $= 496,515136 \text{ cm}^2 \checkmark CA$ $= 496,5 \text{ cm}^2 \checkmark R$	1RT reading the correct values 1C conversion 1M multiplication 1CA answer 1R rounding to 1 decimal digit (5)	L2 M
3.2.3	$\frac{\text{Perimeter}}{2} = \text{Length} + \text{width}$ $\frac{201,93}{2} = 66,04 + \text{width} \checkmark SF$ $100,965 = 66,04 + \text{width}$ $100,965 - 66,04 = \text{width} \checkmark S$ $34,925 \text{ cm} = \text{width} \checkmark CA$	1 SF substitution 1S simplification 1CA answer (3)	L2 M

QUESTION 4 [24]			
Ques.	Solution	Explanation	Level
4.1.1	24 ✓✓RT	2RT (2)	L1 M&P
4.1.2	$P \text{ (No of 11B/Total)} = \frac{8}{46} \checkmark RT \checkmark$ $= \frac{4}{23} \checkmark CA$	1RT numerator 1RT denominator 1CA simplified answer (3)	L2 P
4.1.3	2 ✓✓RT	2RT (2)	L1 M&P
4.1.4	$2/48 \times 100 \checkmark$ $= 4,17\% \checkmark \checkmark$	1 A Correct values 1 M calculating percentage 1 CA rounded to two decimals (3)	L2 M&P
4.2.1	$\text{Distance} = \text{Speed} \times \text{Time}$ $135 \text{ km} = 98 \text{ km/h} \times \text{Time} \checkmark SF$ $\text{Time} = \frac{\text{Distance}}{\text{Speed}}$ $= \frac{135}{98} \checkmark M$ $= 1,37755102 \text{ h}$ $\checkmark C \quad \checkmark M$ $= 1 \text{ h } 23 \text{ minutes} + 25 \text{ minutes}$ $= 1 \text{ h } 48 \text{ minutes} \checkmark CA$	1SF Substitution 1M Changing subject of formula 1C Convert to min 1M Adding time 1CA Time taken (5)	L3 M
4.2.2	$\text{Litres used} = \frac{135}{12} \checkmark MA$ $= 11,25 \text{ litres} \checkmark A$ $\text{Petrol left} = 50 \text{ litres} - 11,25 \text{ litres}$ $= 38,75 \text{ litres} \checkmark CA$ $= 37,5 \text{ litres} \checkmark MA$ $\text{Statement valid} \checkmark O$	1M Dividing by 12 1A No of litres 1CA No of litres left 1MA subtraction of full tank 1O Valid (5)	L4 M
4.2.3	$\text{Distance} = 135 \times 2 \checkmark$ $= 270 \text{ km}$ $\text{Cost} = 270 \times 1650 \checkmark$ $= 445\,500$ $= 445\,500 / 100 \checkmark$ $= R4\,455 \checkmark$	1 M multiplying by 2 1 M multiplying by cents 1 C converting to rands 1 CA answer (4)	L2 M&P
TOTAL:			100