



# NATIONAL SENIOR CERTIFICATE

**GRADE 12**

**JUNE 2026**

## MATHEMATICAL LITERACY P2 MARKING GUIDELINE

**MARKS: 100**

Symbol	Explanation
<b>M</b>	Method
<b>MA</b>	Method with accuracy
<b>CA</b>	Consistent accuracy
<b>A</b>	Accuracy
<b>C</b>	Conversion
<b>S</b>	Simplification
<b>RT</b>	Reading from a table/graph/diagram
<b>SF</b>	Correct substitution in a formula
<b>O</b>	Opinion/Explanation/Reasoning
<b>P</b>	Penalty, e.g. for no units, incorrect rounding off etc.
<b>R</b>	Rounding off/Reason
<b>NPR</b>	No penalty for correct rounding minimum two decimal places
<b>AO</b>	Answer only
<b>MCA</b>	Method with consistent accuracy
<b>RCA</b>	Rounding with consistent accuracy

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This marking guideline consists of 10 pages.  
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**NOTE:**

- If a candidate answers a question TWICE, only mark the FIRST attempt.
- If a candidate has crossed out (cancelled) an attempt to a question and NOT redone the solution, mark the crossed out (cancelled) version.
- Consistent Accuracy (CA) applies in ALL aspects of the marking guidelines; however, it stops at the second calculation error.
- If the candidate presents any extra solution when reading from a graph, table, layout plan and map, then penalize for every extra incorrect item presented.
- Opinion mark is only granted when ONE THIRD of the response is correct.

**KEY TO TOPIC SYMBOL:****F = Finance; M = Measurement; MP = Maps, plans and other representations; P = Probability****QUESTION 1 [22 MARKS]****ANSWER ONLY FULL MARKS**

<b>Ques.</b>	<b>Solution</b>	<b>Explanation</b>	<b>Level</b>
1.1.1	Temperature = 250°F ✓✓RT	2RT correct temperature (2)	M L1
1.1.2	The Imperial System ✓✓A	2A correct system (2)	M L1
1.2.1	Digital time/12hr format ✓✓A	2A correct time format (2)	M L1
1.2.2	A quarter to eight in the morning <b>OR</b> ✓✓A Forty five minutes past seven in the morning	2A time in words (2)	M L1
1.2.3	Time = $45 \times 60$ ✓C = 2 700 seconds ✓A	1C conversion 1A answer in seconds (2)	M L1
1.3.1	B ✓✓A	2A correct definition (2)	MP L1
1.3.2	F ✓✓A	2A correct definition (2)	M L1
1.3.3	A ✓✓A	2A correct definition (2)	MP L1
1.3.4	G ✓✓A	2A correct definition (2)	MP L1
1.3.5	D ✓✓A	2A correct definition (2)	M L1
		<b>[20]</b>	

QUESTION 2 [20 MARKS]			
Ques.	Solution	Explanation	Level
2.1.1	Medicine Root Trail ✓✓RT	2RT correct trail (2)	MP L1
2.1.2	Roundtrip distance = $\frac{7.5}{0,6214}$ ✓M = 12,069 5 ... ✓CA ≈ 12,07 km ✓R	1M dividing by 0,6214 1CA distance 1R rounding to two decimal places (3)	MP L2
2.1.3	Probability = 0 ✓✓A <b>OR</b> None ✓✓A	2A correct answer (2)	P L2
2.1.4	Map distance = 5,4 cm ✓ Straight one way distance = $\frac{5,4}{2,4} \times 1$ ✓MCA = 2,25 km Return distance = 2,25 x 2 ✓MCA = 4,5 km ✓CA  <b>OR</b> Straight one way distance = $\frac{5,4}{2,4} \times 1$ ✓MCA = 2,25 km ✓MCA  One way from given distance = $\frac{12,07}{2}$ ✓CA = 6,03 km ✓CA  <b>OR</b> Straight one way distance = $\frac{7,5}{2}$ ✓M = 3,75 miles ✓CA  One way from given distance = $\frac{3,75}{0,6214} \times 1$ ✓C = 6,03 km ✓CA  Hein is incorrect as the trail does not follow a straight line. ✓O  <b>OR</b> Hein is incorrect as the straight line does not take into account the terrain. ✓O	1A scale line 2,4 cm Accept (2,3cm to 2,5cm) 1MCA divide correct distance multiplied by 1 1MCA multiply by 2 for return distance 1CA actual distance 1O opinion          1MCA divide by 2 for one way distance CA Answer  1MCA convert correct distance multiplied by 1 1CA actual distance  1O opinion (5)	MP L4
2.2.1	Hein and his friends were walking faster from 09:00 to 09:30. ✓✓CA	2CA correct explanation (2)	MP L2

2.2.2	<p>Distance between cars and hiking trail = <math>\frac{\overset{\check{C}}{250}}{\overset{\check{M}}{1\,000}} \times 2 = 0,5 \text{ km}</math> <math>\check{CA}</math></p> <p>Distance walked on the day = <math>0,5 \text{ km} + 12,07 \text{ km} = 12,57 \text{ km}</math> <math>\check{CA}</math></p> <p><b>OR</b></p> <p><math>\frac{250}{1\,000} = 0,25 \text{ km}</math> <math>\check{C}</math></p> <p><math>(0,25 \text{ km} \times 2) + 12,07 \text{ km} = 12,57 \text{ km}</math> <math>\check{CA}</math> <math>\check{M}</math> <math>\check{CA}</math></p> <p><math>\check{MCA}</math></p>	<p><b>CA from 2.1.2</b></p> <p>1C conversion</p> <p>1M multiply by 2</p> <p>1CA answer</p> <p>1CA distance walked</p> <p>1C conversion</p> <p>1MCA multiply by 2</p> <p>1M addition</p> <p>1CA distance walked</p> <p>(4)</p>	MP L3
2.3.1	<p>Cost per person = <math>R4\,025 \times 3 \text{ nights}</math> <math>\check{RT}</math></p> <p>= <math>R12\,075</math> <math>\check{MCA}</math></p> <p><math>\therefore \frac{R12\,075}{5}</math> <math>\check{M}</math></p> <p>= <math>R2\,415 \text{ per person}</math> <math>\check{CA}</math></p> <p><b>OR</b></p> <p>Cost per person = <math>\frac{\overset{\check{RT}}{R4025} \times \overset{\check{MCA}}{3}}{\overset{\check{RT}}{5}} = R2415 \text{ per person}</math> <math>\check{CA}</math></p>	<p>1RT find 3nights</p> <p>1MCA multiply correct values</p> <p>1M divide cost by 5</p> <p>1CA cost per person</p> <p>(4)</p>	F L2
2.3.2	<p>Cheaper <math>\check{\check{O}}</math></p> <p><b>OR</b></p> <p>Less crowd <math>\check{\check{O}}</math></p> <p><b>OR</b></p> <p>Better available <math>\check{\check{O}}</math></p> <p><b>OR</b></p> <p>Less stress and congestion <math>\check{\check{O}}</math></p> <p><b>(Accept any other relevant explanation)</b></p>	<p>2O first reason</p> <p>(2)</p> <p>[24]</p>	MP L4

QUESTION 3 [27 MARKS]			
Ques.	Solution	Explanation	Level
3.1.1	$\text{Radius} = \frac{70}{2} \checkmark \text{M}$ $= 35 \text{ cm} \checkmark \text{CA}$	1M dividing 70 cm by 2 1CA correct radius <b>(CA ONLY if 110 cm used)</b> (2)	M L1
3.1.2	$\text{Distance of one rotation} = 2 \times 3,142 \times 35 \checkmark \text{SF}$ $= 219,94 \text{ cm} \checkmark \text{CA}$ $\therefore 23,7 \text{ km} \times 100\,000$ $= 2\,370\,000 \text{ cm} \checkmark \text{C}$  $\text{Number of wheel rotations} = \frac{2\,370\,000}{219,94} \checkmark \text{M}$ $= 10\,775,66609 \checkmark \text{CA}$ $\approx 10\,776 \text{ rotations} \checkmark \text{R}$  <b>OR</b>  $\text{Distance of one rotation} = 2 \times 3,142 \times 35 \checkmark \text{SF}$ $= 219,94 \text{ cm} \checkmark \text{CA}$ $\therefore \frac{219,94}{100\,000}$ $= 0,0021994 \text{ km} \checkmark \text{C}$  $\text{No. of wheel rotations} = \frac{23,7}{0,0021994} \checkmark \text{M}$ $= 10\,775,66609 \checkmark \text{CA}$ $\approx 10\,776 \text{ rotations} \checkmark \text{R}$	<b>CA from 3.1.1</b> 1SF substitution 1CA distance in cm 1C distance in cm  1M dividing correct values 1CA answer 1R rounding  <b>OR</b>  1SF substitution 1CA distance in cm 1C distance in km  1M dividing correct values 1CA answer 1R rounding (6)	M L3
3.1.3	$\text{Handlebar} = 185 \text{ cm} - (70 \times 2) \checkmark$ $= 45 \text{ cm} \checkmark \text{A}$	1MA Correct values 1A Answer (2)	M L1
3.1.4	$\text{Volume} = 3,142 \times (4 \text{ cm})^2 \times 22 \text{ cm} \checkmark \text{SF}$ $= 1\,106 \text{ cm}^3 \checkmark \text{CA}$  $\text{But } 1 \text{ cm}^3 = 1 \text{ ml}$  $\text{Thus } 1\,160 \div 1\,000 \checkmark \text{C}$  $= 1,106 \text{ litre} \checkmark \text{CA}$ $\therefore \text{It is enough} \checkmark \text{O}$	1SF substitution 1CA distance in $\text{cm}^3$  1C conversion to litres  1CA answer 1O opinion (5)	M L4
3.1.5	$^{\circ}\text{F} = (1,8 \times ^{\circ}\text{C}) + 32^{\circ}$ $90 = (1,8 \times ^{\circ}\text{C}) + 32^{\circ} \checkmark \text{SF}$ $^{\circ}\text{C} = \frac{90-32}{1,8} \checkmark \text{M}$ $= 32,22^{\circ}\text{C} \checkmark \text{CA}$	1SF substitution 1M changing subject of formula 1CA answer in $^{\circ}\text{C}$ (3)	M L2
3.1.6	$\text{Probability (green)} = \frac{4}{17} \checkmark \text{A}$	1A numerator 1A denominator (2)	P L2

3.2.1	Ratio = 51 : 34 ✓A = 3 : 2 ✓A	1A correct ratio 1A simplified format (2)	M L1
3.2.2	Diameter of small cog = $\frac{2}{3} \times 7,2 \text{ cm} \times 2$ ✓M = 9,6 cm ✓CA	<b>CA from 3.2.1</b> 1M multiply radius with correct fraction 1MCA multiply by 2 1CA answer (3)	M L2
		<b>[25]</b>	

QUESTION 4 [31 MARKS]			
Ques.	Solution	Explanation	Level
4.1.1	$\text{Width} = 2,46 \text{ ft} \times \sqrt{\text{C}} 30,5 \text{ cm}$ $= 75,03 \text{ cm} + 4 \sqrt{\text{M}} \text{ cm} = 79,03 \text{ cm} \checkmark \text{CA}$ $\text{Length} = 110 \text{ cm} + 4 \text{ cm} = 114 \text{ cm} \checkmark \text{CA}$ $\therefore \text{Area of a canvas} = 114 \text{ cm} \times 75,03 \text{ cm} \checkmark \text{SF}$ $= 9009,42 \text{ cm}^2 \checkmark \text{CA}$	1C conversion to cm 1M Adding 4 1CA width 1CA length 1SF substitution 1CA area (6)	M L3
4.1.2	$\text{Area of the canvas} = \frac{9009,42 \text{ cm}^2}{10000} \checkmark \text{C}$ $= 0,900942 \text{ m}^2$ <p>Area of canvas to be painted:</p> $= 0,900942 \text{ m}^2 - (0,15 \text{ m}^2 \times 2) - 0,24 \text{ m}^2 \checkmark \text{MCA}$ $= 0,360942 \text{ m}^2 \checkmark \text{CA}$ <p style="text-align: center;"><b>OR</b></p> <p>Convert to cm<sup>2</sup>: <math>0,15 \times 10\,000 = 1500 \text{ cm}^2 \checkmark \text{C}</math>  <math>0,24 \times 10\,000 = 2\,400 \text{ cm}^2</math></p> $9009,42 - (1\,500 \times 2) - 2\,400 = 3609,42 \text{ cm}^2 \checkmark \text{CA}$	<b>CA from 4.1.1</b> 1 C conversion  1MCA Subtract correct values 1CA answer  1 C conversion of both sides 1MCA subtract correct values 1CA answer (3)	M L2
4.1.3	<p>No. of bottlecaps needed:            = largest circle + middle circle + smallest circle</p> $= 68 + \frac{68}{2} + \frac{34}{2} \checkmark \text{M}$ $= 119 \text{ bottlecaps} \checkmark \text{CA}$	1M no of bottlecaps for middle circle 1M bottlecaps for smallest circle 1CA no. of bottlecaps (3)	M L2
4.2.1	South East $\checkmark \checkmark \text{A}$	2A correct direction (2)	MP L1
4.2.2	$82 \text{ mm} : 246 \text{ km} \checkmark \text{RT}$ $1 \text{ mm} : 3 \text{ km} \checkmark \text{S}$ $1 \text{ mm} : 3 \times 1\,000\,000 \checkmark \text{C}$ $1 : 3\,000\,000 \checkmark \text{CA}$ <p style="text-align: center;"><b>OR</b></p> $82 \text{ mm} : 246 \text{ km} \checkmark \text{RT}$ $82 \text{ mm} : 246 \times 1\,000\,000 \checkmark \text{C}$ $82 \text{ mm} : 246\,000\,000 \checkmark \text{S}$ $1 : 3\,000\,000 \checkmark \text{CA}$	1RT Correct values in correct ratio 1S Simplification 1C converting to the same units 1CA Unit ratio (4)	MP L3



4.2.3	<p>Speed = <math>\frac{\text{Distance}}{\text{Time}}</math>  <math>105 \text{ km/h} = \frac{246 \text{ km}}{\text{Time}} \checkmark \text{SF}</math></p> <p>Time = <math>\frac{246 \text{ km}}{105 \text{ km/h}} \checkmark \text{M}</math>  <math>= 2,3429 \text{ h} \checkmark \text{CA}</math></p> <p><math>\therefore 0,3429... \times 60 \checkmark \text{C}</math>  <math>= 20,57142...</math>  <math>\approx 21 \text{ minutes}</math>  <math>\therefore \text{Time} = 2 \text{ hours } 21 \text{ minutes} \checkmark \text{CA}</math></p>	<p>1SF substitution</p> <p>1M changing subject of the formula  1CA answer</p> <p>1C conversion to minutes  1CA time in hours and minutes</p> <p>(5)</p>	MP L3
4.2.4	<p>Arrival time = 13:50  + 02:21 (travelling time) <math>\checkmark \text{M}</math>  = 16:11 <math>\checkmark \text{CA}</math></p>	<p><b>CA from 4.2.1</b>  1M adding travel time  1CA arrival time</p> <p>(2)</p>	M L2
4.2.5	<p>No. of litres of petrol = <math>\frac{246}{100} \times 7,5 \checkmark \text{MCA}</math>  <math>= 18,45 \text{ l} \checkmark \text{CA}</math></p> <p>Amount of petrol = <math>18,45 \text{ l} \times 1,20</math>  <math>= 22,14 \text{ l} \checkmark \text{CA}</math></p> <p>Thus she is incorrect <math>\checkmark \text{O}</math></p> <p><b>OR</b></p> <p>No. of litres of petrol = <math>\frac{246}{100} \times 7,5 \checkmark \text{MCA}</math>  <math>= 18,45 \text{ l} \checkmark \text{CA}</math></p> <p>Amount of petrol = <math>18,45 \text{ l} \times \frac{120}{100}</math>  <math>= 22,14 \text{ l} \checkmark \text{CA}</math></p> <p>Thus she is incorrect <math>\checkmark \text{O}</math></p> <p><b>OR</b></p> <p>No. of litres of petrol: <math>\checkmark \text{MCA}</math>  <math>= \frac{246}{100} \times 1,2 \times 7,5 \checkmark \text{CA}</math>  <math>= 22,14 \text{ l} \checkmark \text{CA}</math></p> <p>Thus she is incorrect <math>\checkmark \text{O}</math></p>	<p>1MCA consumption rate  1CA no. of liters of petrol</p> <p>1CA increase by 20%</p> <p>1 O Opinion</p>	MP L4

