



Access fun Grade 8–12 quizzes, matric past papers, K53 learner mock tests, and NBT prep!

All in one easy-to-use app.

DOWNLOAD GO STUDY NOW



Tap on the buttons above to download the app

 www.gostudy.club



**NATIONAL
SENIOR CERTIFICATE**

GRADE 11

NOVEMBER 2017

**MATHEMATICAL LITERACY P2
MARKING GUIDELINE**

MARKS: 100

Symbol	Explanation
M	Method
MA	Method with accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT/RG/RM	Reading from a table/Reading from a graph/Reading 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/Reason
AO	Answer only
NPR	No penalty for rounding

This marking guideline consists of 8 pages.

QUESTION 1 [29]			
Question	Solution	Explanation	Topic and Level
1.1	<p>Total number of cars and minibuses = $(10 \times 5) + (5 \times 5)$ $= 50 + 25$ $= 75 \checkmark$</p> <p>Probability = $\frac{50 \checkmark}{75 \checkmark}$</p> <p>Accept 0,667 OR 66,7%</p>	<p>1 M Calculated total number of cars and minibuses</p> <p>1 A Numerator 1A Denominator</p> <p>(3)</p>	P L2
1.2	<p>Amount for cars washed Monday – Friday: $10 \times 30 = 300 \times 5 \checkmark$ $= R1\ 500 \checkmark$</p> <p>Amount for cars Saturday and Sunday = $\frac{160}{100} \checkmark \times 10$ $= 16 \checkmark$ $= 16 \times 30 \times 2$ $= R960 \checkmark$</p> <p>Amount for minibuses (Monday – Friday) $= 5 \times 40$ $= R200$ 200×5 $= R1\ 000 \checkmark$</p> <p>Amount for minibuses (Saturday and Sunday): $\frac{130}{100} \times 5 = 6,5 = 7 \checkmark$ $7 \times 40 \times 2$ $= R560 \checkmark$</p> <p>Total Amount = $1\ 500 + 1\ 000 + 960 + 560$ $= R4\ 020 \checkmark$</p> <p>Claim is valid \checkmark</p>	<p>1M Multiplied by 10 and 5 1CA Amount for cars</p> <p>1M Increase by 60% 1CA Number of cars 1CA Amount for cars on Saturday and Sunday</p> <p>1CA Number of minibuses</p> <p>1CA Number of minibuses 1CA Amount for minibuses</p> <p>1CA Total amount 1 O Claim valid</p> <p>(10)</p>	F L4

1.3	<p>Water per car = 25×3 = 75 litres</p> <p>Water for cars in 5 days = $10 \times 5 \times 75$ = 3 750 litres ✓</p> <p>Water for cars on Saturdays and Sundays = $16 \times 2 \times 75$ = 2 400 litres ✓</p> <p>Water per microbus = 25×4 = 100 litres</p> <p>Water per microbus in 5 days = $5 \times 5 \times 100$ = 2 500 litres ✓</p> <p>Water per microbus on Saturdays and Sundays = $7 \times 2 \times 100$ = 1 400 litres ✓</p> <p>Total number of litres = $3\,750 + 2\,400 + 2\,500 + 1\,400$ ✓ = 10 050 litres ✓</p> <p style="text-align: center;">OR</p> <p>Amount of water = amount for cars + amount for microbuses = $(3 \times 25 \times 82)$ ✓ + $(4 \times 25 \times 39)$ ✓✓ = 6 150 litres ✓ + 3 900 litres ✓ = 10 050 litres ✓</p>	<p>CA from 1.1</p> <p>1M Water for cars Mondays to Fridays</p> <p>1CA Water for cars on Saturday and Sunday</p> <p>1CA Water for microbuses Mondays to Fridays</p> <p>1CA Microbuses on Saturdays and Sundays</p> <p>1M Addition 1CA Answer</p> <p style="text-align: right;">(6)</p>	<p>M L3</p>
1.4	<p>Water for 7 days = 10 050 litres</p> <p>Water for a month = $10\,050 \times 4$ = 40 200 litres ✓ 40 200 l = 40,2 kilolitres ✓</p> <p>Cost of water from table:</p> <p>$6 \times 8.66 = R51,96$ ✓ $9 \times 10.02 = R90,18$ ✓ $15 \times 12,28 = R184,20$ ✓ $10,2 \times 15.25 = R155,55$ ✓</p> <p>Total amount = R481,89 = $R481,89 \times 1,14$ ✓ = R549,35 ✓</p>	<p>CA from 1.3</p> <p>1MA Amount of litres 1C Amount of kilolitres</p> <p>1M First tariff 1M Second tariff 1M Third tariff 1M Fourth tariff</p> <p>1M Calculated VAT 1CA Amount with VAT</p> <p style="text-align: right;">(8)</p>	<p>M&F L3</p>
1.5	<p>Most people do not work on Saturdays and Sundays. ✓✓ It is the only time they have available to wash their cars. ✓✓</p> <p>Accept any other relevant answer.</p>	<p>2O Opinion</p> <p style="text-align: right;">(2)</p>	<p>DH L4</p>

QUESTION 2 [24]				
2.1	2.1.1	R212 ✓✓	1RT Correct value from table (2)	DH L2
	2.1.2	$\frac{188-76}{76} \times 100$ $= 147,37\% \checkmark \text{OR } 147,4\%$ <p>Statement is valid ✓ % increase is more than 100%</p>	1M Used correct values 1M Divided by correct value 1CA % 1J Valid NPR (4)	F L4
	2.1.3	Cost of burying a 5-year-old is less than that of burying a 15-year old. ✓✓ Accept any other relevant answers.	2J Opinion (2)	F L4
2.2	2.2.1	Diameter = 150 cm Length of figure = 100 cm A = 100 ✓ – 60 ✓ = 40 cm ✓ B = 150 – 100 = 50 cm ÷ 2 ✓ = 25 cm ✓ 25 : 40 ✓ = 5 : 8	1M Subtraction 1M Used 60 1CA Value of A 1 Divided by 2 1CA Answer 1M Ratio No penalty if not simplified Penalise 1 mark if ratio is written with units (6)	M L4

	2.2.2	<p>Area of cross shaped glass = Area of longer rectangle $+ 2 \times \text{area of smaller rectangles}$ $= 1 \times b + 2(1 \times b)$ $= 100 \times 40 + 2(30 \times 40) \checkmark$ $= 4\,000 + 2\,400$ $= 6\,400 \text{ cm}^2 \checkmark$</p> <p style="text-align: center;">OR</p> <p>$4(40 \times 30) + (40 \times 40) \checkmark$ $= 6\,400 \text{ cm}^2 \checkmark$</p> <p style="text-align: center;">OR</p> <p>$2(100 \times 40) - 40^2$ $= 8\,000 - 1\,600 \checkmark$ $= 6\,400 \text{ cm}^2 \checkmark$</p> <p>$\frac{6\,400}{10\,000} = 0,64 \text{ m}^2 \checkmark$</p> <p>Area wasted = Area of circle – Area of shape $= \pi r^2 - 0,64$ $= 3,142 \times 0,75 \times 0,75 \checkmark - 0,64$ $= 1,767375 - 0,64 \checkmark$ $= 1,127375 \text{ m}^2 \checkmark$</p> <p>Amount lost = $1,127375 \times 15$ $= \text{R}16,91 \checkmark$</p> <p>With VAT = $\frac{114}{100} \times 16,91 \checkmark$ $= \text{R}19,28 \checkmark$</p> <p>Statement is valid. \checkmark</p>	<p>1M Substituted in formula</p> <p>1CA Simplification</p> <p>1C Converted to square metres (m^2)</p> <p>1M Used formula 1SF Substitution</p> <p>1 CA Unused area</p> <p>1CA Total amount 1M Added VAT</p> <p>1CA Answer</p> <p>1O Opinion (10)</p>	M&F L4
--	-------	---	---	-----------

QUESTION 3 [16]			
3.1	<p>Company A:</p> $\text{Mean} = \frac{29\,000 + 25\,000 + 24\,000 + 15\,000 + 15\,000 + 8\,000}{6} \checkmark$ $= \frac{116\,000}{6}$ $= R19\,333,33 \checkmark$ <p>Company B:</p> $\text{Mean} = \frac{31\,000 + 29\,000 + 17\,000 + 14\,000 + 13\,000 + 7\,000}{6}$ $= \frac{111\,000}{6}$ $= R18\,500 \checkmark$ <p>Difference = $19\,333,33 - 18\,500$</p> $= R833,33 \checkmark$ <p>Statement is not valid</p>	<p>1M Addition 1M Divided by 6</p> <p>1CA Mean</p> <p>1CA Mean</p> <p>1CA Difference 1O Not valid (6)</p>	DH L3&4
3.2	No modal salary for company B. $\checkmark \checkmark$	2A (2)	DH L2
3.3	<p>Modal value = 15 000 \checkmark</p> $\frac{15}{100} \times 15\,000 \checkmark$ $= R2\,250 \checkmark$ <p>Year 1 = $\frac{105}{100} \times 2\,250 \checkmark$</p> $= R2\,362,50 \checkmark$ <p>Year 2 = $\frac{105}{100} \times 2\,362,50$</p> $= R2\,480,63 \checkmark$	<p>1RT Correct modal value 1M Calculated 15% of modal value 1CA Value</p> <p>1M Increased by 5%</p> <p>1CA First year</p> <p>1CA Final amount (6)</p>	DH&F L3
3.4	0 OR 0% OR Impossible $\checkmark \checkmark$	2A Answer (2)	DH L2

QUESTION 4 [31]				
4.1	4.1.1	$A = 21\,168\,700 + 2\,305\,800 \checkmark + 677\,000 + 2\,214\,400$ $= 26\,365\,900 \checkmark$ $B = \frac{22\,165\,000}{27\,635\,900} \checkmark \times 100$ $= 80,2\% \checkmark$	1 MA Added correct values 1CA Total 1 Correct values 1CA % (4)	DH L2
	4.1.2	Indian / Asian $\checkmark \checkmark$	2A Answer (2)	DH L2
	4.1.3	Two million two hundred and fourteen thousand four hundred $\checkmark \checkmark$	2A Answer (2)	DH L2
4.2	4.2.1	$57 \checkmark \checkmark - 38 \checkmark = 19 \checkmark$	1M Correct number of seats on the left 1M Subtraction 1M Correct number of seats on the right 1CA Answer (4)	M&P L2
	4.2.2	Percentage of seats for the handicapped $\frac{4}{38} \times 100 \checkmark \checkmark$ 10,526315789 10,53% \checkmark	1RM Correct values numerator and denominator 1M Multiplied by 100 1CA Answer (3)	M&P L3
4.3	4.3.1	Total distance = $35 + 57 + 11 + 21 + 59 + 41 \checkmark$ $= 224 \text{ km } \checkmark$ Speed = $\frac{\text{distance}}{\text{time}}$ $105 = \frac{224}{\text{time}} \checkmark$ Time = $\frac{224}{105}$ $= 2,133 \text{ hours } \checkmark$ Minutes = $0,133 \times 60 \checkmark$ $= 7,98$ 2 hours 8 minutes \checkmark Time of arrival = $7:00 + 2 \text{ hours } 8 \text{ minutes}$ $= 9:08 \text{ am } \checkmark$ Claim is valid \checkmark	1RM Correct values 1CA Distance 1M Substituting in formula 1 S Change subject of formula 1CA Time in hours 1C Time in minutes 1CA Arrival time 1O Claim valid (8)	M, M&P L3&4

	4.3.2	<p>Amount before increase = $\frac{2,82}{1,068} \checkmark$</p> <p>= R2,64 \checkmark</p> <p>Total distance travelled = 224×2</p> <p>= 448 km \checkmark</p> <p>Amount = $448 \times 2,64 \checkmark$</p> <p>= R1 182,72 \checkmark</p> <p>= R1 183 \checkmark</p>	<p>CA from 4.3.1</p> <p>1M Divided by 1,068</p> <p>1A Amount</p> <p>I CA Distance</p> <p>1M Multiplied by amount calculated</p> <p>1CA Amount</p> <p>1R Nearest rand (6)</p>	F L3
	4.3.3	<p>R61 \checkmark</p> <p>R349 \checkmark</p>	<p>1A R61</p> <p>1A R349 (2)</p>	M&P L2
		TOTAL:		100

