Province of the
EASTERN CAPE
EDUCATION

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

1.3	Water per car = 25 × 3 = 75 litres Water for cars in 5 days = 10 × 5 × 75 = 3 750 litres ✓ Water for cars on Saturdays and Sundays = 16 × 2 × 75 = 2 400 litres ✓ Water per microbus = 25 × 4 = 100 litres Water per microbus in 5 days = 5 × 5 × 100 = 2 500 litres ✓ Water per microbus on Saturdays and Sundays = 7 × 2 × 100 = 1 400 litres ✓ Total number of litres = 3 750 + 2 400 + 2 500 + 1400 ✓ = 10 050 litres ✓ **OR** Amount of water = amount for cars + amount for microbuses = (3 × 25 × 82) ✓+ (4 × 25 × 39) ✓✓ = 6 150 litres ✓ + 3 900 litres ✓ = 10 050 litres ✓	CA from 1.1 1M Water for cars Mondays to Fridays 1CA Water for cars on Saturday and Sunday 1CA Water for microbuses Mondays to Fridays 1CA Microbuses on Saturdays and Sundays 1M Addition 1CA Answer (6)	M L3
1.4	Water for 7 days = 10 050 litres Water for a month = 10 050 × 4 = 40 200 litres ✓ 40 200 l = 40,2 kilolitres ✓ Cost of water from table: 6 × 8.66 = R51,96 ✓ 9 × 10.02 = R90,18 ✓ 15 × 12,28 = R184,20 ✓ 10,2 × 15.25 = R155,55 ✓ Total amount = R481,89 = R481,89 x 1,14 ✓ = R549,35 ✓	CA from 1.3 1MA Amount of litres 1C Amount of kilolitres 1M First tariff 1M Second tariff 1M Third tariff 1M Fourth tariff 1M Calculated VAT 1CA Amount with VAT (8)	M&F L3
1.5	Most people do not work on Saturdays and Sundays. ✓✓ It is the only time they have available to wash their cars. ✓✓ **Accept any other relevant answer.**	2O Opinion (2)	DH L4

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% ✓**OR** 147,4% Statement is valid ✓ % increase is more than 100%	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	Area of cross shaped glass = Area of longer rectangle + 2 × area of smaller rectangles = l × b + 2(l × b) = 100 × 40 + 2(30 ×40) ✓ = 4 000 + 2 400 = 6 400 cm^2 ✓ **OR** 4(40 x 30) + (40 x 40) ✓ = 6 400 cm^2 ✓ **OR** 2(100 x 40) – 40^2 = 8 000 –1 600 ✓ = 6 400 cm^2 ✓ $\frac{6\,400}{10\,000}$ = 0,64 m^2 ✓ Area wasted = Area of circle – Area of shape = πr^2 – 0,64 = 3,142 × 0,75 × 0,75 ✓ – 0,64 = 1,767375 – 0,64 ✓ = 1,127375m^2 ✓ Amount lost = 1,127375 × 15 = R16,91 ✓ With VAT = $\frac{114}{100}$ × 16,91 ✓ = R19,28 ✓ Statement is valid. ✓	1M Substituted in formula 1CA Simplification 1C Converted to square metres (m²) 1M Used formula 1SF Substitution 1 CA Unused area 1CA Total amount 1M Added VAT 1CA Answer 1O Opinion (10)	M&F L4

QUESTION 3 [16]			
3.1	Company A: Mean $= \frac{29\,000+25\,000+24\,000+15\,000+15\,000+8\,000}{6}$ ✓✓ $= \frac{116\,000}{6}$ = R19 333,33✓ Company B: Mean $= \frac{31\,000+29\,000+17\,0000+14\,000+13\,000+7\,000}{6}$ $= \frac{111\,000}{6}$ =R 18 500 ✓ Difference = 19 333,33 – 18 500 = R833,33 ✓ Statement is not valid	1M Addition 1M Divided by 6 1CA Mean 1CA Mean 1CA Difference 1O Not valid (6)	DH L3&4
3.2	No modal salary for company B. ✓✓	2A (2)	DH L2
3.3	Modal value = 15 000 ✓ $\frac{15}{100} \times 15\,000$ ✓ = R2 250 ✓ Year 1 = $\frac{105}{100} \times 2\,250$ ✓ = R2 362,50 ✓ Year 2 = $\frac{105}{100} \times 2\,362{,}50$ = R2 480,63 ✓	1RT Correct modal value 1M Calculated 15% of modal value 1CA Value 1M Increased by 5% 1CA First year 1CA Final amount (6)	DH&F L3
3.4	0 **OR** 0% **OR** Impossible ✓✓	2A Answer (2)	DH L2

QUESTION 4 [31]				
4.1	4.1.1	A = 21 168 700 + 2 305 800 ✓+ 677 000 + 2 214 400 = 26 365 900 ✓ B = $\frac{22\ 165\ 000}{27\ 635\ 900}$ ✓ × 100 = 80,2% ✓	1 MA Added correct values 1CA Total 1 Correct values 1CA % (4)	DH L2
	4.1.2	Indian / Asian ✓✓	2A Answer (2)	DH L2
	4.1.3	Two million two hundred and fourteen thousand four hundred ✓✓	2A Answer (2)	DH L2
4.2	4.2.1	57 ✓✓ – 38 ✓ = 19 ✓	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 $\frac{4}{38}$ x 100 ✓✓ 10,526315789 10,53% ✓	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 ✓ = 224 km ✓ Speed = $\frac{distance}{time}$ 105 = $\frac{224}{time}$ ✓ Time = $\frac{224}{105}$ = 2,133 hours ✓ Minutes = 0,133 × 60 ✓ = 7,98 2 hours 8 minutes ✓ Time of arrival = 7:00 + 2 hours 8 minutes = 9:08 am ✓ Claim is valid ✓	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	Amount before increase $=\frac{2,82}{1,068}$ ✓ = R2,64 ✓ Total distance travelled = 224 x 2 = 448 km ✓ Amount = 448 x 2,64 ✓ = R1 182,72 ✓ = R1 183 ✓	CA from 4.3.1 1M Divided by 1,068 1A Amount I CA Distance 1M Multiplied by amount calculated 1CA Amount 1R Nearest rand (6)	F L3
	4.3.3	R61 ✓ R349 ✓	1A R61 1A R349 (2)	M&P L2
			TOTAL:	**100**