



Province of the
EASTERN CAPE
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 10

NOVEMBER 2018

**MATHEMATICAL LITERACY P2
MARKING GUIDELINE**

MARKS: 75

Codes	Explanation
M	Method
MA	Method with Accuracy
CA	Consistent Accuracy
A	Accuracy
C	Conversion
D	Define
J	Justification/Reason/Explain
S	Simplification
RD	Reading from a table OR a graph OR a diagram OR a map OR a plan
F	Choosing the correct formula
SF	Substitution in a formula
O	Opinion
P	Penalty, e.g. for no units, incorrect rounding off, etc.
R	Rounding Off
AO	Answer only
NPR	No penalty for rounding OR omitting units

This marking guideline consists of 5 pages.

KEY TO TOPIC SYMBOL:			
F = Finance; M = Measurement; MP = Maps, Plans and other Representations			
DH = Data Handling; P = Probability.			
QUESTION 1 [25 marks] ✓			
Ques.	Solution	Explanation	Topic and Level
1.1.1	$A = R2\,923,25 + R224,00 + R1\,182,00 + R1\,875,00 \checkmark M$ $= R6\,204,25 \quad \checkmark A$ $B = R6\,204,25 + R18\,795,75 \checkmark MCA$ $= R25\,000 \checkmark CA$	1M Adding all deductions 1A Total deductions (2) CA from (A) 1MCA Addition 1CA Gross Pay/ Basic Salary (2)	F L2
1.1.2	% Pension deduction $= \frac{1\,875}{25\,000} \checkmark MCA \times 100\% \quad \checkmark M$ $= 7,5\%$	CA from 1.1.1 (B) 1MCA Correct values 1M Multiply by 100 (2)	F L2
1.1.3	Payslip no.: 75 $Years = \frac{75}{12} \quad \checkmark MA$ $= 6,25 \text{ years} \quad \checkmark A$ $Months = 0,25 \times 12$ $= 3 \text{ months} \quad \checkmark MCA$ $\therefore 6 \text{ years and } 3 \text{ months} \quad \checkmark CA$	1MA Divided by 12 1M Number of years 1MCA Convert decimal part to months 1CA Years and months (4)	F L3
1.1.4	<ul style="list-style-type: none"> Privacy <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> Confidentiality $\checkmark \checkmark A$ <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> Fraud $\checkmark \checkmark A$ 	2A Reason (2)	F L4
1.1.5	New salary = $R25\,000 \times 1,064$ $= R26\,600 \quad \checkmark MCA$ New Tax Amount = $R2\,923,25 + R175,00$ $= R3\,098,25 \quad \checkmark MA$ New Pension = $R1\,875,00 + R120,00$ $= R1\,995 \quad \checkmark MA$ Net pay = $R26\,600 - (R3\,098,25 + R1\,995 + R224,00 + R1\,182,00)$ $= R26\,600 - R6\,499,25 \quad \checkmark MCA$ $= R20\,100,75 \quad \checkmark CA$ Difference in Net Pay = $R20\,100,75 - R18\,795,75$ $= R1\,305,00 \quad \checkmark CA$ Statement valid $\checkmark O$	CA from 1.1.1 (B) 1MCA New Salary 1MA New Tax 1MA New Pension 1MCA Subtraction 1CA New Net Pay 1CA Difference 1O Valid (7) <div style="border: 1px solid black; padding: 5px; width: fit-content;"> No mark for opinion without calculations </div>	F L4

1.2.1	Area of base = Length \times Breadth $= 100 \text{ cm} \times 35 \text{ cm} \checkmark \text{SF}$ $= 1 \text{ m} \times 0,35 \text{ m} \checkmark \text{C}$ $= 0,35 \text{ m}^2 \checkmark \text{CA}$	1SF Correct length and breadth 1C Conversion to m 1CA Area in m^2 (3) Penalise for incorrect unit in final answer	M L3
1.2.2	Height of sand = $0,75 \times 70 \text{ cm} \checkmark \text{MA}$ $= 52,5 \text{ cm} \checkmark \text{S}$ $\approx 53 \text{ cm} \checkmark \text{R}$	1MA 75% of 70 1S Simplification 1R Nearest cm (3)	M L2
		[25]	
QUESTION 2 [20 marks]			
Ques.	Solution	Explanation	Topic and Level
2.1.1	$\% \text{ Storage} = \frac{383\ 203}{898\ 221} \times 100\% \checkmark \text{MA}$ $= 42,7\% \checkmark \text{A}$	1MA Correct values multiplied by 100 1A Percentage (2) NPR	DH L2
	$\checkmark \text{A}$ $\checkmark \text{A}$		
2.1.2	From 2014 to 2017 the water storage decreased and then increased in 2018 $\checkmark \text{A}$	1A 2014 – 2017 1A Decrease 1A Increase 2018 (3)	DH L4
2.1.3	Below average rainfall $\checkmark \checkmark \text{A}$ OR Low rainfall	2O Reason (2)	DH L4

2.1.4	Mean % $= \frac{38,7 + 37,1 + 65,8 + 33,9 + 27,4 + 50,1}{6} \checkmark M$ $= \frac{250}{6} \checkmark CA$ = 41,7% $\checkmark CA$	1M Adding all values 1M Dividing by 6 1CA Average (3) NPR	DH L3
2.1.5	Probability = $\frac{4}{6} \checkmark \checkmark A$ = 0,667 $\checkmark CA$	2A Numerator 1A Denominator 1CA 3 dec. places (4)	P L2
2.2	Volume of water tank = $\pi \times \text{radius} \times \text{radius} \times \text{height}$ = $3,142 \times 750 \text{ mm} \times 750 \text{ mm} \times 1\,820 \text{ mm} \checkmark SF$ = $3,142 \times 75 \text{ cm} \times 75 \text{ cm} \times 182 \text{ cm} \checkmark C$ = $3\,216\,622,5 \text{ cm}^3 \checkmark CA$ = 3 216, 6225 litres $\checkmark C$ The advertised capacity refers to the maximum amount of water the water tank can hold, while the calculated capacity refers to the actual content of the water tank. Accept any other relevant explanation. $\checkmark O$	1SF Substitution 1A Radius 1C Conversion to cm 1CA Volume 1C Conversion to litres 1O Opinion (6)	M L4
		[20]	
QUESTION 3 [18 marks]			
Ques.	Solution	Explanation	Topic and Level
3.1.1	Perimeter of base = $2 \times \text{length} + 2 \times \text{breadth}$ = $(2 \times 190 \text{ cm}) + (2 \times 160 \text{ cm}) \checkmark SF$ = $(2 \times 1,9 \text{ m}) + (2 \times 1,6 \text{ m}) \checkmark C$ = 3,8 m + 3,2 m = 7 m $\checkmark CA$	1SF Substitution 1C Conversion to m 1CA Perimeter (3)	M L3
3.1.2	Height of the sand = $0,805 \times 31 \text{ cm} \checkmark MA$ = 24,955 cm $\approx 25 \text{ cm} \checkmark SF$	1MA Calculating % 1R Nearest cm (2)	M L2
3.2.1	Playschool only caters for children from 3 months to 5 years old. $\checkmark \checkmark A$	2A Reason (2)	MP L4
3.2.2	Yes $\checkmark A$ There are toilets for the disabled. $\checkmark A$	1A Yes 1O Reason (2)	MP L2

3.2.3	Safety reasons OR Noise levels of crying babies ✓✓A OR Close to the changing room ✓✓A Accept any other relevant explanation	2O Reason (2)	MP L4
3.3.1	The infants from 3 months – 1 year 6 months need more attention. ✓✓A They need to be changed regularly. ✓✓A Accept any other relevant explanation	2O Reason (2)	F L4
3.3.2	Income = $(9 \times 1\,050) + (10 \times 820) + (16 \times 550)$ = R9 450 + R8 200 + R8 800 ✓S = R26 450 × 12 ✓M = R317 400 ✓CA	1M Multiplying and adding 1A Number of 3y7mnts – 5 yrs. 1S Simplification 1M Multiply by 12 1CA Annual income (5)	F L3
		[18]	
QUESTION 4 [12 marks]			
Ques.	Solution	Explanation	Topic and Level
4.1.1	✓A ✓A Travel south on the N1, pass the offramp on the east, ✓A turn west at the intersection of the N1 and N12 and continue the N12. ✓A	1A South 1A N1 1A Turn west 1A N12 (4)	MP L4
4.1.2	✓M Bar scale: 1,8 cm = 1 000 m 1,8 cm = 100 000 cm ✓C 1 cm = 55 555, 55556 cm □ 1: 55 555,55556 ✓CA Accept 1,7 – 1,9 No mark in the final answer if units indicated	1M Measure bar scale 1C Metres to cm 1CA Unit scale NPR (3)	MP L3
4.2.1	Number of tourists = $\frac{1\,500\,000}{1,0625}$ ✓A = 1 411 764,706 ✓M = 1 411 765 ✓R	1A 1 500 000 1M Dividing by 1,0625 1CA Number of tourists (3)	DH L2
4.2.2	Holiday in December ✓✓A OR People have money to travel ✓✓A Accept any other relevant reason	2A Reason (2)	DH L4
		[12]	
		TOTAL:	75