Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 12

JUNE 2024

MATHEMATICAL LITERACY P2 MARKING GUIDELINE

MARKS: 100

Symbol	Explanation
M	Method
M/A	Method with accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT/RG/RD/RM	Reading from a table/graph/diagram/map
SF	Correct substitution in a formula
O	Opinion/Explanation//Reasoning
P	Penalty, e.g. for no units, incorrect rounding off etc.
R	Rounding off
NPR	No penalty for rounding
AO	Answer only
MCA	Method with consistent accuracy
RCA	Rounding consistent with accuracy

This marking guideline consists of 10 pages.

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MARKING GUIDELINES

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 penalise for every extra incorrect item presented.

KEY TO TOPIC SYMBOL:
F = Finance; M = Measurement; MP = Maps, plans and other representations; P = Probability

QUESTION 1 [20 MARKS] **ANSWER ONLY FULL MARKS**

Ques.	Solution	Explanation	Level
1.1.1	The perimeter of a shape is the total distance around the edges defining the outline of that shape. ✓✓A **OR** Total distance around the shape. ✓✓A	2A correct explanation (2)	M L1
1.1.2	Length of wall = $\frac{370}{100}$ ✓C = 3,7 m ✓A	1C convert cm to m 1A correct answer (2)	M L1
1.1.3	P = length + length + height + height = 3,7 + 3,7 + 2,1 + 2,1 ✓M = 11,6 m ✓CA	**CA from 1.1.2** 1M adding correct values 1CA correct answer from 1.1.2 (2)	M L1
1.2.1	Distance cycled = $\frac{75}{0,6214}$ ✓MA = 120,6952044 ≈ 120,7 km ✓A **Accept: 121 km / 120,695 km**	1MA dividing correct values 1A correct answer **NPR** (2)	M L1
1.2.2	Total distance logged: = 120,7 km + 114,3 km + 271 km + 148,1 km ✓M = 654,1 km ✓CA **Accept 654,4 km / 654,095**	**CA from 1.2.1** 1M adding correct values 1CA correct answer (2)	M L1
1.3.1	Pniel ✓✓RT	2RT reading from map (2)	MP L1
1.3.2	5 water points ✓✓RT	2RT correct answer (2)	MP L1
1.3.3	N1 ✓✓RT	2RT correct answer (2)	MP L1
1.3.4	SW or Southwest ✓✓RT	2RT correct direction (2)	MP L1
1.3.5	Helshoogte Pass ✓✓RT	2RT correct answer (2)	MP L1
		[20]	

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QUESTION 2 [24 MARKS]			
Ques.	**Solution**	**Explanation**	**Level**
2.1.1	Bar Scale ✓✓A **OR** Linear Scale✓✓A **OR** Graphic ✓✓A Scale	2A identifying correct scale (2)	MP L1
2.1.2	N6 ✓RT and N1 ✓RT	1RT first national road 1RT second national road **Accept any order** (2)	MP L1
2.1.3	North✓A North East **OR** NE✓A	1A first direction 1A second direction (2)	MP L2
2.1.4	His wife will be crossing the border between two countries and therefore needs a passport. ✓✓O **OR** His wife will enter another country. ✓✓O	2O opinion (2)	MP L4
2.1.5	✓M % difference = $\frac{\text{R22,49} - \text{R21,77}}{\text{R21,77}}$ ✓A × 100% ✓M = 3,307% ✓CA Statement is invalid – it will cost less than 4% ✓O **OR** ✓M % difference = $\frac{(\text{R22,49} \times 75) - (\text{R21,77} \times 75)}{(\text{R21.77} \times 75)}$ ✓A × 100% ✓M $= \frac{1\,686{,}75 - 1\,632{,}75}{1\,632{,}75} \times 100\%$ = 3,307% ✓CA Statement is invalid – it will cost less than 4%. ✓O	1M subtracting correct values 1M multiplying with 100% 1A correct denominator 1CA simplification 1O opinion **OR** 1M subtracting correct values 1M multiplying with 100% 1A correct denominator 1CA simplification 1O opinion (5)	F L4

2.2.1	Staff working at the gates need to go home. ✓✓O **OR** The wild animals in the park make it unsafe to travel or be in unprotected parts during the night.✓✓O **OR** Animals are not visible in the dark, park/camp gates open when people can see the animals. ✓✓O **OR** Access control ✓✓O **OR** To avoid overcrowding ✓✓O **OR** Security reasons ✓✓O **OR** So that people travelling from far or within the Kruger National Park, can plan ahead. ✓✓O **OR** Accept any other valid reason.	2O reason (2)	MP L4
2.2.2	Other camps = 5 Main camps = 7 ✓RT Difference = 7 – 5 = 2 ✓CA	1RT number of both camps 1CA difference with 1 correct camp **AO** (2)	MP L2
2.2.3	Distance = speed × time ✓RT 54 km = 50 km/h × time ✓SF Time on gravel road $= \frac{54\text{ km}}{50\text{ km/h}}$ ✓S = 1,08 h = 1h 4 min 48 sec ✓C Time he will arrive at the gate is: 17:15 + 1:4:48 = 18:19:48 ✓CA **If calculated as follows do not penalise.** 1h05min 17:15 + 1h05min = 18:20	1RT distance 1SF substitution with 50 km/h 1S change the formula 1C converting time 1CA arrival time (5)	MP L3

2.2.4	The roads are not so busy / people drive slower / more animals are visible. ✓✓O **OR** It is the scenic route. ✓✓O **OR** To experience a sense of adventure. ✓✓O **OR** Gravel roads give you more access (short cut) to different parts of the park. ✓✓O **OR** The route blends in with nature and gives a more authentic bushveld experience. ✓✓O **OR** Accept any other reasonable answer.	2O reason (2)	MP L4
		[24]	

QUESTION 3 [36 MARKS]			
Ques.	**Solution**	**Explanation**	**Level**
3.1.1	Number of coloured pencils across = 83 ÷ 6 ✓M = 13,833333…✓CA ≈ 13 pencils ✓R Number of coloured pencils down = 22 ÷ 16,7 ✓M = 1,317365269 ≈ 1 pencil ✓R Total number of pencils in one container = 13 × 1 = 13 pencils ✓CA Number of pencils in 3 containers = 13 × 3 ✓M = 39 pencils ✓CA ∴ Correct ✓O	1M dividing diameters 1CA simplification 1R number of pencils 1M dividing heights 1R number of pencils 1CA number of pencils in one container 1M multiply by 3 1CA total number of pencils 1O opinion (9)	M L4
3.1.2	Probability of taking a purple pencil from a container $= \frac{6}{39}$ ✓A ✓A = 0,153846153 ≈ 0,154 ✓R	**CA from 3.1.1** 1A numerator 1A denominator 1R 3 decimal places (3)	P L2
3.2.1 (a)	Area of rectangle = length × width = 150 mm × 120 mm ✓C ✓SF = 18 000 mm^2 ✓A	1C convert to mm 1SF substitution 1A area of rectangle (3)	M L2
(b)	Area of circle = π × radius^2 = 3,142 × 40^2 ✓A **OR** 3,142 × 40 × 40 ✓A = 5 027,2 mm^2 ✓CA = 5 027,2 mm^2 ✓CA Area without photo = 18 000 mm^2 – 5 027,2 mm^2 ✓M = 12 972,8 mm^2 ≈ 12 973 mm^2 ✓CA	**CA from 3.2.1 (a)** 1A radius 1CA area of circle 1MCA subtracting two areas 1CA rounding to nearest mm^2 (4)	M L3

3.2.2	Surface area of gift box = 2 (length × width) + 2 (width × height) + 2 (length × height) = 2 (38,8 × 27,5) + 2 (27,5 × 30,0) + 2 (38,8 × 30,0) ✓SF✓A = 2 134 + 1 650 + 2 328 ✓S = 6 112 cm^2 ✓CA	1SF substitution 1A correct values 1S simplification 1CA surface area (4)	M L2
3.3.1	Diameter = 31 m × 2 ✓M = 62 m ✓A	1M multiply radius by 2 1A correct diameter (2)	M L2
3.3.2	Maximum height = 50 m + 31 m ✓MA = 81 m ✓A	1MA adding correct values 1A answer (2)	M L2
3.3.3	Circumference = 2 × π x radius = 2 × 3,142 × 31 ✓SF = 194,804 × 2 = 389,608 m ✓MA	1SF substitution 1MA multiply by 2 and answer **NPR** (2)	M L2
3.3.4	Number of households = $\frac{1\ 750}{25}$ ✓M = 70 households ✓A	1M dividing by 25 1A correct answer (2)	M L1
3.4	Volume of 2 cylindrical basins used three times a day = π × r^2 × h = (3,142 × 30^2 × 45) × 2 × 3 ✓SF ✓M = 763 506 cm^3 ✓CA Litres of water used daily = $\frac{763\ 506}{1\ 000}$ × ¾ ✓C = 572,6295 litres ✓CA **OR** Volume of 2 cylindrical basins used three times a day = π × r^2 × h = (3,142 × 30^2 × 45) × 2 × 3 ✓SF ✓M = 763 506 cm^3 ✓CA Litres of water used daily = 763 506 × ¾ = 572 629,5 cm^3 = $\frac{572\ 629,5}{1\ 000}$ ✓C = 572,6295 litres ✓CA	1SF substitution 1M multiplying by 2 and 3 1CA volume 1C converting to litres 1CA ¾ litres of water 1SF substitution 1M multiplying by 2 and 3 1CA volume of water 1C converting to litres 1CA ¾ litres of water (5)	M L3
		[36]	

QUESTION 4 [20 MARKS]			
Ques.	**Solution**	**Explanation**	**Level**
4.1.1	Total number of hours: Friday: 24:00 – 15:30 = 8,5 hours ✓A Saturday – Monday = 24 hours × 3 days = 72 hours✓A Tuesday = 10 hours ✓A Total number of hours = 8,5 + 72 + 10 = 90,5 hours ✓MA Invalid ✓O	1A number of hours on Friday 1A number of hours for 3 days 1A number of hours on day of departure 1MA adding correct values and correct answer. 1O opinion (5)	M L4
4.1.2	radius = $\frac{\text{diameter}}{2} = \frac{10}{2} = 5$ cm ✓A Volume of cylinder = 3,142 × radius^2 × height 1 571 cm^3 = 3,142 × 5^2 × height ✓SF Height = $\frac{1\,571}{78,55}$ ✓M Height = 20 cm ✓CA	1A find radius 1SF substitution 1M change subject of the formula 1CA finding the height (4)	M L3
4.1.3	Area of top and bottom surface = 78,55 cm^2 × 2 ✓M = 157,1 cm^2 ÷ 100^2 ✓C = 0,01571 m^2 ✓S Total cost = 0,01571 m^2 × R144,65 ✓M = R2,27 ✓CA **OR** Area of top = 78,55 cm^2 ÷ 100^2 ✓C = 0,007855 m^2 ✓S Cost of wood of top = 0,007855 × R144,65 ✓M = R1,13622575 Total cost = R1,13622575 × 2 ✓M = R2,27 ✓CA	1M multiply by 2 1C divide by 100^2 1S simplification of answer in m^2 1M multiply R144,65 1CA answer **OR** 1C divide by 100^2 1S simplification of answer in m^2 1M multiply R144,65 1M multiply by 2 1CA answer (5)	F L3
4.2.1	Actual length = 3,4 cm × 65 ✓M = 221 cm ✓A	1M multiply correct values and correct answer 1A answer (2)	MP L2

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4.2.2	Probability = $\frac{3}{7}$ ✓A	1A numerator 1A denominator (2)	P L2
4.2.3	The main bedroom. ✓A Room is facing north. ✓O	1A correct room 1O opinion (2)	MP L4
		[20]	
		TOTAL: 100	

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