



Province of the
EASTERN CAPE
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

JUNE 2019

**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 OR reading from a graph OR diagram OR from map a OR a plan
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
O	Opinion
D	Define

This marking guideline consists of 9 pages.

NOTE:

- If a candidate answer 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.

QUESTION 1 [23 MARKS]			
Ques.	Solution	Explanation	Level
1.1.1	Amount overdue $= R26\,263,55 - \checkmark M R25\,754,61 \checkmark RT$ $= R508,94$ <p style="text-align: center;">OR</p> Amount overdue $= R2\,696,94 - \checkmark M R2\,188,00 \checkmark RT$ $= R508,94$	1 RT Correct values 1M Subtracting <p style="text-align: center;">OR</p> 1 RT Correct values 1M Subtracting (2)	L2 F
1.1.2	Probability $= \frac{2 \checkmark A}{11 \checkmark A}$ $= 0,18 \checkmark CA$	1A Numerator 1A Denominator 1CA Rounding (3)	L2 P
1.1.3	EBUS 2715 fees $= 2\,696,94 + (3\,715 \times 7) + (4\,280 \times 2) + 3\,510$ $+ 1\,020 + 25,21 + 14,40 + 210 - 2\,188 \checkmark RT \checkmark M \checkmark M$ $= 39\,853,55$ $= 45\,198,55 - 39\,853,55 \checkmark M$ $= R5\,345$ Difference $= 5\,345 - 3\,715$ $= R1\,630 \checkmark CA$ Statement is not valid $\checkmark O$	1 RT All correct values 1M Adding values 1M Subtracting 2188 1M Subtracting from 45 198,55 1 CA Difference 1O Not valid (6)	L4 F
1.1.4	$\% \text{ Registration fee} = \frac{1\,020 \checkmark RT}{25\,754,61} \times 100 \checkmark M$ $= 3,96\% \checkmark CA \text{ OR } 4\%$	1RT Correct values 1M Multiplying by 100 1CA Percentage NPR (3)	L2 F

1.2.1	$\text{Semester 1} = \frac{(3\,715 \times 4) + 4\,280 + 5\,345 \checkmark M}{6 \checkmark M}$ $= R4\,080,83 \checkmark CA$ $\text{Semester 2} = \frac{(3\,715 \times 3) + 3\,510 + 4\,280}{5}$ $= R3\,787 \checkmark CA$ $\text{Difference} = R4\,080,83 - R3\,787 \checkmark M$ $= R293,83 \checkmark CA$	CA from 1.1.3 1M Adding all values 1M Dividing by 6 1CA Mean 1CA Mean semester 2 1M Subtract 1CA Difference (6)	L3 D
1.2.2	$\text{Amount for 2017} = 4280 \times \frac{100}{105} \checkmark M \checkmark M$ $= R4\,076,19 \checkmark CA$ <p style="text-align: center;">OR</p> $\text{Amount for 2017} = \frac{4280}{1,05} \checkmark M \checkmark M$ $= R4\,076,19 \checkmark CA$	1M Multiplying by 100 1M Dividing by 105 1CA Amount OR 2M Dividing by 1,05 1CA Amount (3)	L2 F
		[23]	

QUESTION 2 [29 MARKS]			
Ques.	Solution	Explanation	Level
2.1.1	Distance from Vanrhynsdorp to Garies $= 433 - 289 \checkmark \text{RT}$ OR $= 258 - 114 \checkmark \text{RT}$ $= 144 \text{ km } \checkmark \text{A}$ OR $= 144 \text{ km } \checkmark \text{A}$ Distance from Kamieskroon to Springbok $= 547 - 479$ OR $= 68 - 0$ $= 68 \text{ km } \checkmark \text{A}$ OR $= 68 \text{ km}$ Incorrect $\checkmark \text{O}$ Strip chart not drawn to scale $\checkmark \text{R}$	1 RT Correct values 1A Distance 1A Distance 1O Incorrect 1O Reason (5)	L4 M&P
2.1.2	Distance $= (289 - 52) + 121 \checkmark \text{M}$ $= 358 \text{ km } \checkmark \text{CA}$ OR Distance $= 65 + 44 + 53 + 75 + 121 \checkmark \text{M}$ $= 358 \text{ km } \checkmark \text{CA}$ Distance $= \text{Speed} \times \text{Time}$ $358 = 95 \times \text{Time } \checkmark \text{SF}$ $\frac{358}{95} = \text{Time } \checkmark \text{M}$ Time $= 3,76842 \text{ hours}$ Minutes $= 0,76842 \times 60$ $= 46 \text{ minutes } \checkmark \text{C}$ Time of arrival $= 7:00 + 0:45 + 3:46 \checkmark \text{M}$ $= 11:31 \checkmark \text{CA}$	1M Add correct distances 1CA Distance 1SF Substitution 1M Change subject of formula 1C Convert to minutes 1M Adding times 1CA Time (7)	L2 M&P L3 M
2.2.1	Area of rectangle $= \text{length} \times \text{width}$ $= 150 \times 120 \checkmark \text{C} \checkmark \text{SF}$ $= 18\,000 \text{ mm}^2 \checkmark \text{A}$ Area of a circle $= \pi \times \text{radius} \times \text{radius}$ $= 3,142 \times 40 \text{ mm} \times 40 \text{ mm } \checkmark \text{A}$ $= 5\,027,2 \text{ mm}^2 \checkmark \text{CA}$ Area without the photo $= 18\,000 - 5\,027,2 \checkmark \text{M}$ $= 12\,972,8 \text{ mm}^2 \checkmark \text{CA}$	1C Convert to mm 1SF Substitution 1A Area of rectangle 1A Radius 1CA Area of circle 1M Subtraction of the two areas 1CA Area without a photo (7)	L3 M

2.2.2	<p>Surface area $= 2(\text{length} \times \text{width} + \text{width} \times \text{height} + \text{length} \times \text{height})$ $= 2(390 \times 270 + 270 \times 300 + 390 \times 300) \checkmark \text{SF} \checkmark \text{A}$ $= 2(105\,300 + 81\,000 + 117\,000) \text{S} \checkmark$ $= 606\,600 \text{ cm}^2 \checkmark \text{CA}$</p>	<p>1SF Substitution 1A Correct values 1S Simplification 1CA Surface area.</p> <p>(4)</p>	L3 M
2.3	<p>Company A $\text{IQR} = 3\,500 - 1\,400 \checkmark \text{RT}$ $= 2\,100 \checkmark \text{CA}$ $\text{Range} = 5\,300 - 800$ $= 4\,500 \checkmark \text{A}$</p> <p>Company C $\text{IQR} = 5\,800 - 3\,900$ $= 1\,900 \checkmark \text{CA}$ $\text{Range} = 6\,300 - 2\,800$ $= 3\,500 \checkmark \text{CA}$</p> <p>Both IQR and range are higher for Company A than Company C $\checkmark \text{O}$</p> <p style="text-align: center;">OR</p> <p>Both IQR and range are smaller for company C than Company A $\checkmark \text{O}$</p>	<p>1RT Correct values 1CA IQR (A) 1A Range (A)</p> <p>1CA IQR (C) 1CA Range (C)</p> <p>1O Finding</p> <p>(6)</p>	L3 Data
		[29]	

QUESTION 3 [18 MARKS]			
Ques.	Solution	Explanation	Level
3.1.1	Value of A = $6 \times 3 + 1 \times 6$ ✓M $= 18 + 6$ $= 24$ ✓A Value of B = $19 - 4$ $= \frac{15}{3}$ ✓M $= 5$ ✓A	1MA Matches won and drawn 1A Value of A 1M Subtracting and dividing by 3 1A Value of B (4)	L2 D
3.1.2	Probability = $\frac{1}{14}$ ✓A✓A	CA from 3.1.1 1A Numerator 1A Denominator (2)	L2 P
3.1.3	Points = $2 \times 3 + 1$ $= 7$ ✓A Total = $21 + 7$ $= 28$ ✓MA Difference = $28 - 24$ $= 4$ ✓MA Statement not valid ✓O	CA from 3.1.1 1A Points 1MA Total points 1MA Difference 1O Not valid (4)	L4 D

3.2.1	<p>School A = $45 \times 2 \times 3 = 270$ ✓M $45 \times 2 = 90$ Total = $270 + 90$ = 360 minutes ✓MA Hours = $\frac{360}{60}$ = 6 h ✓C</p> <p>School B = $30 \times 8 + 30$ = $240 + 30$ = 270 minutes Hours = $\frac{270}{60}$ = 4,5 h ✓CA School B is CAPS compliant ✓O</p>	<p>1M No. of minutes</p> <p>1M Total no. of minutes</p> <p>1C Convert to hours</p> <p>1CA No of hours for school B 1O Conclusion</p> <p>(5)</p>	L4 M
3.2.2	<p>Ratio = $\frac{62}{2}$ ✓MA = 31</p> <p>Grade 10 = 31×4 = 124</p> <p>Grade 11 = 31×3 = 93</p> <p>Total books = $62 + 124 + 93$ = 279 ✓CA</p>	<p>1MA Concept of ratio</p> <p>1MA Total for Grade 10 and Grade 11</p> <p>1CA Total</p> <p>(3)</p> <p>[18]</p>	L3 D

QUESTION 4 [30 MARKS]			
Ques.	Solution	Explanation	Level
4.1.1	There are emergency exit points between row 8 and row 9 ✓✓A	2A Reason (2)	L4 M&P
4.1.2	Seats in the economy class = 18 ✓MA × 6 ✓MA = 108 ✓A	1MA Seats per row 1MA Total rows 1A Total no of seats (3)	L2 M&P
4.1.3	There is more space ✓✓R OR Service is better ✓✓R OR It is more relaxing ✓✓R Any other relevant reason.	2R Reason (2)	L4 M&P
4.2.1	Quarter finals = (1 412 × 2) + (4 249 × 2) ✓RT = 2 824 + 8 498 ✓MA = \$11 322 ✓CA Finals = (2 186 × 2) + (5 538 × 2) ✓MA = 4 372 + 11 076 = \$15 448 ✓CA Total amount = 11 322 + 15 448 ✓M = \$26 770 ✓CA Statement is valid ✓O	1RT Correct values for both matches × 2 1MA Adding 1CA Total 1RT Correct values for both matches × 2 1CA Total for final 1M Adding 1CA Total in dollars 1O Valid (8)	L4 F
4.2.2	% change = $\frac{5\,538 - 3\,918}{3\,918} \times 100\%$ ✓RT✓M✓M = 41,35% ✓CA OR % change = $\frac{4\,295 - 1\,995}{1\,995} \times 100\%$ ✓RT✓M✓M = 115,29% ✓CA	1RT Correct values 1M Correct denominator 1M Multiplying by 100 1CA Percentage (4)	L2 F

4.2.3	<p>Year 1 = $20\,000 \times 1,065 \checkmark M$ = \$21 300 $\checkmark CA$</p> <p>Year 2 = $21\,300 \times 1,065$ = \$22 684,50 $\checkmark CA$</p> <p>Rate for 9 months = $\frac{9}{12} \times 6,5\%$ = 4,875% $\checkmark A$</p> <p>Year 3 = $22\,684,50 \times 1,04875$ = \$23 790,37 $\checkmark CA$ OR</p> <p>Final amount = $20\,000 \times 1,065 \checkmark M \times 1,065 \checkmark M \times 1,04875 \checkmark A \checkmark A$ = \$23, 79037 $\checkmark CA$</p>	<p>1M Increasing by 6,5% 1CA Amount for year 1 1CA Amount for year 2 1A Interest rate for 9 months</p> <p>1CA Final amount</p> <p>(5)</p>	L3 F
4.2.4	<p>Men play more vigorously $\checkmark \checkmark R$ OR Men's matches attract more spectators $\checkmark \checkmark R$ OR Performance/Skills better $\checkmark \checkmark R$ Any other relevant reason</p>	<p>2R Reason</p> <p>(2)</p>	L4 F
4.2.5	<p>Ticket prices increase from day 1 to the final day $\checkmark \checkmark O$</p> <p>Competition gets tougher and therefore matches become more interesting to watch. $\checkmark \checkmark R$</p>	<p>2O Trend</p> <p>2R Reason for trend</p> <p>(4)</p>	L4 D
		[30]	
	TOTAL:	100	

