Province of the
EASTERN CAPE
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 12

JUNE 2024

MATHEMATICAL LITERACY P1 MARKING GUIDELINE

MARKS: 100

Symbol	Explanation
M	Method
MA	Method with accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT	Reading from a table/graph/document/diagram
SF	Correct substitution in a formula
O	Opinion/Explanation
P	Penalty, e.g. for no units, incorrect rounding off, etc.
R	Rounding off
NPR	No penalty for correct rounding minimum two decimal places
AO	Answer only
MCA	Method with constant accuracy

This marking guideline consists of 9 pages.

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 question,
  mark the crossed out (cancelled) version.
- Consistent accuracy (CA) applies in ALL aspects of the marking guidelines. Stop marking at the second calculation error.
- **NOTE**: Consistent accuracy (CA) does NOT apply in cases of a breakdown.
- If the candidate presents any extra solution when reading from a graph, and table then penalise for every extra item presented.
- As a general marking principle, if a candidate has incurred one mistake and there is evidence of sound Mathematics thereafter, then that candidate should lose ONE mark only.

Topics: F – Finance, DH – Data Handling, P – Probability

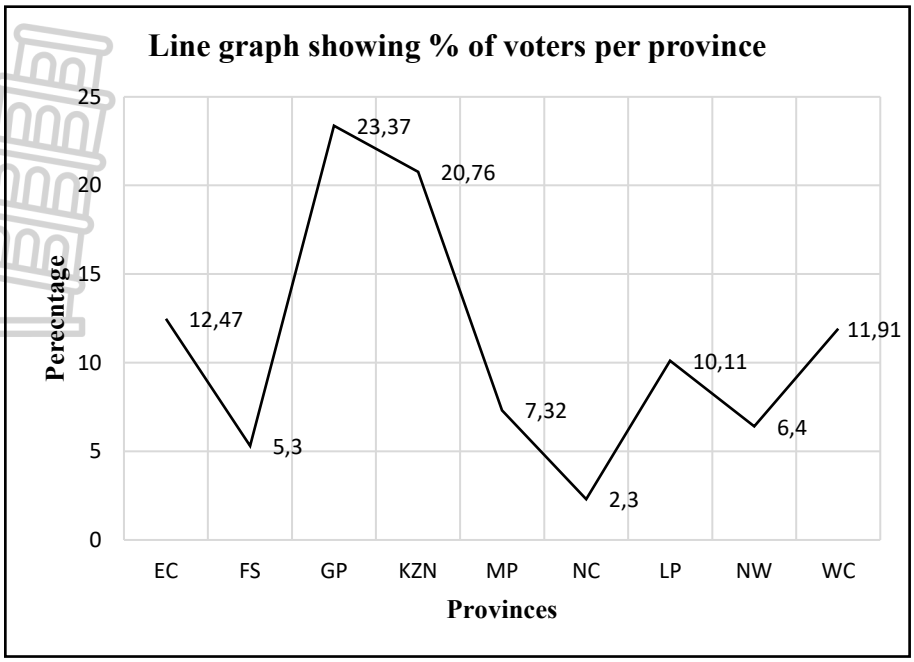
QUESTION 1 [20 MARKS]			
Ques.	**Solution**	**Explanation**	**T&L**
1.1.1	R10,00 ✓✓RT	2RT reading from table (2)	F L1
1.1.2	The rate will be paid per full one hour even if you spend less than one hour ✓✓ O	2 Opinion (2)	F L1
1.1.3	Amount paid: $\frac{75}{100}$ x 20 ✓ M = R15 ✓ A	1M multiplication 1A answer (2)	F L1
1.2.1	Discrete ✓✓A	2 A correct classification (2)	DH L1
1.2.2	Four hundred and ninety thousand, nine hundred and ninety-three ✓✓A	2 A correct wording (2)	DH L1
1.2.3	100% − 68% = 32% ✓A ∴ $\frac{32}{100}$ × 490 993 = 157 117,76 ✓CA ≈ 157 118 ✓A **OR** Females = $\frac{68}{100}$ x 490 993✓MA = 333 875,24 MA = 490 933 – 333 875,24 ✓M = 157 117,76 = 157 118 ✓ CA	1A calculating male percentage 1CA simplification 1A answer R 1MA calculating female number M subtracting correct values CA simplification (3)	DH L1

1.2.4	$\frac{68}{100} \times 490\ 993 = 333\ 875{,}24 \approx 333\ 875$ ✓M 333 875 :490 993 ✓M 1 : 1,47 ✓A Accept also [using percentages] 68 : 100 1 : 1,47	1M multiplication 1MAconcept of ratio in correct order 1CA simplification (3)	DH L1
1.3.1	B ✓✓	2A correct option (2)	P L1
1.3.2	D ✓✓A	2A correct option (2)	P L1
		[20]	

QUESTION 2 [21 MARKS]			
Ques.	**Solution**	**Explanation**	**T&L**
2.1	$\frac{7,5}{100} \times 12$ ✓M $\times$ R32 500 ✓S $=$ R29 250 ✓A	1M multiply by 12 1 simplification 1A answer (3)	F L2
2.2	Annual salary R32 500 $\times$ 12 $=$ R390 000 ✓M Taxable income $=$ R390 000 $-$ R29 250 $=$ R360 750✓A Annual tax $=$ R73 726 $+$ 31% $\times$ (R360 750 $-$ R353 100) ✓SF $=$ R73 726 $+$ 0,31 $\times$ R7 650 $=$ R73 726 $+$ R2 371,50 $=$ R76 097,50 Less rebate: R76 097,50 $-$ R16 425 ✓M $=$ R59 672,50 Less MTC R59 672,50 $-$ [(R347 $+$ R347 $+$ R234 $+$ R234 $+$ R234) $\times$ 12] $= R59\,672{,}50 - R16\,752$ ✓M Annual tax $=$ R42 920,50 Monthly tax $= \frac{\text{R42 920,50}}{12}$ ✓M $=$ R3 576,71 ✓CA 15% of salary: $\frac{15}{100} \times$ R32 500 $=$ R4 875 ✓A Not valid. ✓O	1MA annual salary 1A taxable income 1SF correct substitution 1MA subtracting correct rebate 1MA subtracting medical tax credit 1MCA division by 12 1CA monthly tax 1A 15% of salary 1O opinion (9)	F L3

2.3	R170 734 + 39% × (R817 600 − R641 400) ✓SF ✓S = R170 734 + R68 718✓M = R239 452	1SF correct substitution 1simplification 1M addition (3)	F L2
2.4	Lump sum = 80% × R32 500 ✓M = R26 000 ✓A Balance at the end of First Year =R26 000 + 11,5% × R26 000 ✓M = R28 990 ✓A Balance at the end of Second Year = R28 990 + 11,5% × R28 990 = R32 323,85 ✓A Balance at the end of Third Year = R32 323,85 + 11,5% × R32 323,85 = R36 041,09 ✓CA **OR** Balance = R26 000 × 1,115 ✓M × 1,115 ✓M × 1,115 ✓M = R36 041,09 ✓A	1MA calculating 80% 1simplification 1M multiplication 1A answer 1A answer 1CA answer (6)	F L3
		[21]	

QUESTION 3 [30 MARKS]			
Ques.	**Solution**	**Explanation**	**T&L**
3.1	Northern Cape ✓✓A	2A answer (2)	DH L1
3.2	Method 1: $A = 26\,850\,972 - (3\,348\,392 + 1\,422\,384 + 6\,274\,046 + 1\,965\,259 + 634\,792 + 2\,714\,474 + 1\,718\,340 + 3\,198\,146)$ ✓M $A = 5\,575\,139$ ✓A Method 2: $\frac{20,76}{100} \times 26\,850\,972$ ✓M $= 5\,574\,261,78$ $\approx 5574\,262$ ✓A The difference is caused by rounding off to two decimal places of the percentage. ✓✓	1M addition 1A answer 1M multiplication 1A rounded off answer 2O explanation (6)	DH L4
3.3	$\frac{3\,198\,146}{26\,850\,972}$ ✓RT $\times$ 100% ✓M $= 11,91\%$ ✓A	1RT correct values 1M multiplication 1 A answer (3)	DH L2
3.4	Mean $= \frac{26\,850\,972}{9}$ ✓RT ✓M $= 2\,983\,441,333$ ✓A $\approx 2\,983\,441$ ✓R	1RT correct values 1M division 1A answer 1R rounding (4)	DH L2
3.5	Ascending order: 634 792; 1 422 384; 1 718 340; 1 965 259; 2 714 474; 3 198 146; 3 348 392; 5 575 139; 6 274 046 ✓M Lower Quartile $= \frac{1\,422\,384+1\,718\,340}{2}$ ✓MA $= 1\,570\,362$ ✓A Upper Quartile $= \frac{3\,348\,392 + 5\,575\,139}{2}$ $= 4\,461\,765,5$ ✓A IQR $= 4\,461\,765,5 - 1\,570\,362$ ✓M $= 2\,891\,403,5 \approx 2\,891\,404$ ✓A	1M arranging in ascending/ descending order 1MA calculating lower quartile 1A simplification 1A upper quartile 1CA calculating IQR 1A answer (6)	DH L2

3.6		✓titles ✓✓plotting all 9 ✓ joining the points (4)	DH L3
3.7	To arrange campaigns ✓✓O To provide enough polling observers during elections ✓✓O [Any other valid reason]	2 O opinion (2)	DH L4
3.8	P(Cape province) = 11,91% + 2,3% + 12,47% ✓M = 26,68% ✓A = 0,267 ✓R **OR** P(Cape province) = $\frac{3\ 348\ 392 + 634\ 792 + 3\ 198\ 146}{26\ 850\ 972}$ ✓RT = $\frac{7\ 181\ 330}{26\ 850\ 972}$ ✓M = 0,267 ✓A	1M addition 1A answer 1R rounding off (3)	P L2
		[30]	

QUESTION 4 [29 MARKS]			
Ques.	**Solution**	**Explanation**	**T&L**
4.1.1	7 000 000 ✓✓A	2A answer (2)	F L1
4.1.2	$\frac{\$7\,000\,000}{30}$ ✓M = \$233 333,33 ✓A ≈ \$233 000 ✓R	1M division by 30 1A answer 1R rounding off (3)	F L2
4.2.1	5 000 × 19,1305 ✓RT = R95 652,50 ✓M 2 000 × 24,3861 = R48 772,20 ✓A Total = R144 424,70 ✓A Commission $\frac{2,5}{100}$ × 144 424,7 = R3 610,62 ✓M Money deposited R144 424,70 − R3 610,62 = R140 814,08 ✓A	1RT correct values 1M multiplication 1A answer 1A answer 1M multiplication 1A answer (6)	F L4
4.2.2	To make profit. ✓✓O	2O explanation (2)	F L4
4.3.1	5 provinces ✓✓A	2A answer (2)	DH L1
4.3.2	Pie chart ✓✓A	2A answer (2)	DH L1
4.3.3	$\frac{5\ \checkmark RT}{8\ \checkmark RT}$ × 100 ✓M = 62,5% ✓A	2 RT correct values 1M multiply by 100 1A answer (4)	P L2
4.4.1	Income generated from selling packs is equal to the cost of packs. ✓✓O	2O explanation (2)	F L1
4.4.2	Fixed cost ✓✓A	2A answer (2)	F L1

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4.4.3	Formula for income $= 750n$ ✓M Formula for cost $= 6\,000 + 350n$ ✓M Break-even: $750n = 6\,000 + 350n$ ✓M $400n = 6\,000$ $n = 15$ packs ✓A	1M formula for income 1M formula for cost 1M equation 1A answer (4)	F L4
		[29]	
		TOTAL: 100	

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