



Province of the
EASTERN CAPE
EDUCATION

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

SEPTEMBER 2020

**MATHEMATICAL LITERACY P1
MARKING GUIDELINE**

MARKS: 150

Symbol	Explanation
M	Method
MA	Method with accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT	Reading from a table/a 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 rounding
AO	Answer only
MCA	Method with constant accuracy

This marking guideline consist of 11 pages.

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.

LET WEL:

- *As 'n kandidaat 'n vraag TWEE keer beantwoord, merk slegs die EERSTE poging.*
- *As 'n kandidaat 'n antwoord van 'n vraag doodtrek (kanselleer) en nie oordoen nie, merk die doodgetrekte (gekanselleerde) poging.*
- *Volgehoue akkuraatheid (CA) word in ALLE aspekte van die nasienriglyn toegepas, maar dit hou by die tweede berekeningsfout op.*
- *Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra verkeerde item.*

QUESTION 1 [32 MARKS]			
Ques.	Solution	Explanation	T&L
1.1.1	Stop time = 8×30 ✓M = 240 minutes ✓CA	1M Multiply by 30 1CA Answer in minutes (2)	M L1
1.1.2	Arrive = 10:00 am ✓✓A	2A Correct time (2)	M L1
1.2.1	Profit is the amount of money gained after sale above the cost price. ✓✓A OR Profit is the sale price minus the cost price. ✓✓A	2A Explanation (2)	F L1
1.2.2	125% : R1 200 25% : Profit Profit = $\frac{25\%}{125\%} \times R1\ 200$ ✓M = R240 ✓CA OR 125%: 1 200 100%: Cost Price Cost price = $\frac{100\%}{125\%} \times R1\ 200$ ✓M = R960 ✓CA Profit = 1 200 – 960 ✓CA = R240 ✓CA	1M Division $\frac{25\%}{125\%}$ 1M Multiplication by R1200 1CA Simplification answer 1M Cost price 1CA Cost price 1CA Profit (3)	F L1
1.3.1	$\frac{28,239 \text{ litres}}{28,239 \text{ litres}} = \frac{R434,61}{28,239}$ ✓M 1 litre = R15,39 ✓CA	1M Dividing by 28,239 1CA Cost per litre NPR (2)	M L1
1.3.2	383,5 km : 28,239 litres ✓M 13,58 km : 1 litre ✓CA	1M Method 1CA Number of litres NPR (2)	M L1
1.3.3	13,58 km : R15,39 ✓RT 1 km : R1,13328242 ✓CA	CA from 1.3.1 and 1.3.2 1RT Correct values used 1CA Answer NPR (2)	F L1

1.3.4	$\frac{175 \text{ km}}{13,58} \checkmark\checkmark\text{M}$ $= 12,89 \text{ litres} \checkmark \text{CA}$ OR $383,5 \text{ km} : 28,239 \text{ litres}$ $175 \text{ km} : ? \text{ (Fuel required)} \checkmark \text{M}$ $\text{Fuel required} = \frac{175}{383,5} \times 28,239 \checkmark \text{M}$ $= 12,89 \text{ litres} \checkmark \text{CA}$	CA from 1.3.2 2M Dividing 175 km by 13,58 1CA Number of litres OR 1M Concept of ratio 1M Fraction multiplied by 28,239 1CA Answer (3)	M L1
1.3.5	$383,5 \text{ km} : \text{R}434,61$ $\text{Distance} : \text{R}675,55$ $\text{Distance} = \frac{25\,9073,425}{434,61} \checkmark\text{M}$ $= 596,11 \text{ km} \checkmark\text{CA}$	1M Division: numerator (383,5 × 675,55) by 434,6 1CA Distance travelled NPR (2)	M L1
1.4.1	It means 50 cm on the map represents 100 km on the ground. $\checkmark\checkmark\text{A}$	2A Scale concept (2)	M&P L1
1.4.2	$50 \text{ cm} : 10\,000\,000 \text{ cm}$ $\frac{50 \text{ cm}}{50} : \frac{10\,000\,000}{50} \checkmark\text{C}$ $1 : 200\,000 \checkmark\text{CA}$	1 C Conversion 1M Dividing by 50 1CA Unit ratio (3)	M&P L1
1.5.1	2017 $\checkmark\checkmark\text{RT}$	2RT Correct year (2)	D L1
1.5.2	$38\,086\,769 + 38\,820\,239 + 39\,550\,889 \checkmark\text{M}$ $= 116\,457\,897 \checkmark\text{CA}$	1M Adding correct values 1CA Total urban population (2)	D L1
1.5.3	$\checkmark\text{RT}$ $\text{Difference} = 7\,794\,798\,739 - 7\,547\,858\,925 \checkmark\text{M}$ $= 246\,939\,814 \checkmark\text{CA}$	1M Subtracting correct values 1RT Correct values 1CA Difference (3)	D L1
		[32]	

QUESTION 2 [40 MARKS]			
Ques	Solution	Explanation	T/L
2.1.1	$R25\ 000 - R10\ 000 \checkmark M$ $= R15\ 000 \checkmark CA$	1M Subtract correct values 1CA Answer (2)	F L1
2.1.2 (a)	$\checkmark RT$ $\frac{1\ 207,50}{10\ 000} \times 100\% \checkmark M$ $= 12,08\% \checkmark CA$	1M Method 1RT Correct value 1CA % NPR (3)	F L2
(b)	$R355,95 + R69$ $= R424,95 \checkmark CA \checkmark M$	1M Adding correct values 1CA Answer (2)	F L1
(c)	$R424,95 \times 48$ $= R20\ 397,60 + R1\ 207,50 \checkmark M$ $= R21\ 605,10 \checkmark S$ $= R21\ 605,10 - R10\ 000 \checkmark MA$ $= R11\ 605,10 \checkmark CA$	CA from 2.1.2(b) 1M Adding R20 397,60 and 1 207,50 1S Simplification 1MA Subtracting R10 000 1CA Difference (4)	F L2
2.1.3	February 2024 $\checkmark A \checkmark A$	1A Month 1A Year (2)	F L1
2.1.4	250 CAD = ? 1CAD = R11,0555 $250 \times R11,0555 \checkmark M$ $= R2\ 763,875 \checkmark S$ $= R2\ 763,88 \checkmark CA$	1M Multiplying by rate 1S Simplification 1CA Answer NPR (3)	F L2
2.2.1	Inflation is the increase in prices over the period of time resulting in the fall of the purchasing value of money. $\checkmark \checkmark A$	2A Explanation (2)	F L1
2.2.2	$2018 = R12,24 \times (100\% + 4,62\%) \checkmark M$ $= R12,81 \checkmark S$ $2019 = R12,81 \times (100\% + 4,38\%) \checkmark M$ $= R13,37 \checkmark CA$	1M Calculating percentage 1S Simplification 1M 2019 price 1CA Answer (4)	F L2
2.3.1	4 Tour packages $\checkmark \checkmark RG$	2RG Break-even-point (2)	F L2
2.3.2	Income = $R1\ 000 \times 8 \checkmark RG \checkmark SF$ $= R8\ 000 \checkmark S$ OR $R8\ 000 \checkmark \checkmark \checkmark RG$	1RG Correct value 1SF Substituting 1S Simplification 3RG Correct value (3)	F L1

2.3.3	\checkmark RG $R6\ 000 \times 15\% \checkmark$ M $= R900 \checkmark$ CA	1M VAT 1RG Correct value 1CA Answer (3)	F L1
2.3.4	\checkmark RG Profit = $R6\ 000 - R5\ 000 - 900 \checkmark$ SF $= R100 \checkmark$ CA	CA from 2.3.3 VAT value 1SF Substitution 1RG Correct values 1CA Answer (3)	F L2
2.3.5	1 Tour package $\checkmark\checkmark$ RG	2RT Correct value (2)	F L1
2.4.1	Unemployment Insurance Fund $\checkmark\checkmark$ A	2A Correct answer (2)	F L1
2.4.2	$R12\ 500 \times 2\% \times 12 \checkmark\checkmark$ M $= R3\ 000 \checkmark$ A	1M Using 2% 1M Multiplication by 12 1A Simplification and answer (3)	F L1
		[40]	

QUESTION 3[23 MARKS]			
Ques	Solution	Explanation	T/L
3.1.1	$3 \times 12 \checkmark M$ $= 36 \checkmark CA$ $\frac{1}{8} \times 5 \times 6 \checkmark C$ $= 3,75 \text{ ml of salt} \checkmark CA$ <p style="text-align: center;">OR</p> 1 pinch : 6 people $? : 36 (3 \times 12) \checkmark M$ $1 \text{ pinch} = \frac{36}{6} = 6 \text{ pinches} \checkmark CA$ 1 pinch : $\frac{1}{8}$ teaspoons 6 pinches : ? $\text{Teaspoon} = \frac{1}{8} \times 6 = \frac{6}{8} \checkmark C$ 1 teaspoon : 5 ml $\frac{6}{8} : ?$ $\frac{6}{8} \times 5 = 3,75 \text{ ml} \checkmark CA$	1M Multiply by 3 1CA Answer 1C Conversion 1CA Amount of salt 1M Calculating dozen 1CA Number of pinches 1C Conversion 1CA Number of millilitres (4)	M L2
3.1.2	$55 + 20 = 75 \text{ minutes}$ $75 \text{ mins} \times 12 \checkmark M$ $= 900 \text{ minutes}$ $= \frac{900}{60} \checkmark C$ $= 15 \text{ hours} \checkmark CA$	1M Adding 20 and 55 1M Multiply by 12 1C Conversion 1CA Answer in hours Accept 16,25 hours if 13 Sundays have been used (4)	M L2
3.1.3	$6 : 250 \text{ g}$ $66 : ? \checkmark M$ $64 \times 250 \checkmark S$ $= 16\,500 \checkmark S$ $= \frac{16\,500}{6} \checkmark M$ $= 2\,750 \text{ g} \checkmark S$ $= 2,75 \text{ kg} \checkmark C$	1A Use 66 1M Multiplying by 250 1S Simplification 1M Dividing by 6 1S Simplification 1C Conversion (5)	M L3
3.1.4	$^{\circ}F = \left(\frac{9}{5} \times 180\right) + 32 \checkmark SF$ $= 324 + 32 \checkmark S$ $= 356 \checkmark CA$	1SF Substitution 1S Simplification 1CA Correct degrees (3)	M L2

3.2.1	$\text{Radius} = \frac{125}{2} \checkmark M$ $= 62,5 \text{ mm } \checkmark CA$	1M Dividing by 2 1CA Correct radius (2)	M L1
3.2.2	Volume is the amount of space that an object occupies. $\checkmark\checkmark A$	2A Explanation (2)	M L1
3.2.3	$\text{Volume} = 3,142 \times 6,25 \text{ cm} \times 6,25 \text{ cm} \times 19 \text{ cm}$ $= 2\,331,95 \text{ cm}^3 \checkmark CA$	1C Conversion 1SF Substitution 1CA Answer NPR (3)	M L2
		[23]	

QUESTION 4 [22 MARKS]			
Ques.	Solution	Explanation	T/L
4.1.1	4 ✓✓RP	2RP Number of entrances (2)	M&P L1
4.1.2	39 ✓✓RP	2RP Number of shops (2)	M&P L1
4.1.3	✓RP $\frac{20}{39} \times 100\%$ ✓M = 51,28% = 51 % ✓R✓S	CA from 4.1.2 1RP Correct values 1M Multiplying by 100 1S Simplification 1R Rounding (4)	P L2
4.1.4	159 ✓✓A	2A Correct shop no (2)	MP L1
4.1.5	South West ✓✓A OR ✓✓A SW	2A Correct direction (2)	MP L1
4.1.6	Woolworths ✓✓RP	2RP Correct shop (2)	MP L1
4.1.7	Entrance 2 ✓✓RP	2RP Correct entrance (2)	MP L1
4.2.1	12 parts ✓✓RP	2RP Number of parts (2)	MP L1
4.2.2	✓✓✓✓A B, D, C, A	1A B 1A D 1A C 1A A (4)	MP L2
		[22]	

QUESTION 5 [33 MARKS]			
Ques	Solution	Explanation	T&L
5.1.1	5 524 ✓M 6 000 ✓CA	1M Adding correct values 1CA Rounding (2)	D L1
5.1.2	$\frac{1838\ 307}{12}$ ✓RT = 153,25 ✓CA	1RT Correct values 1M Dividing by 12 1CA Mean value NPR (3)	D L2
5.1.3	Joe Gqabi $\frac{94\ 876}{2\ 876}$ ✓RT = 32,988 ✓M ≈ 33 ✓R	1RT Correct values 1M Dividing by 2 876 1R Rounding (3)	D L2
5.1.4	Amathole East ✓✓A	2A Correct district (2)	D L1
5.1.5	$7520 - 2498$ ✓RT ✓M = 5022 ✓CA	1RT Correct values 1M Subtracting values 1CA Range (3)	D L2
5.1.6	733, 647, 619, 599, 489, 459, 411, 398, 363, 327, 254, 225 ✓✓A	2A Arranged in descending order (2)	D L1
5.1.7	Total male educators = $53\ 241 \times (100 - 71,9)\%$ ✓M = $53\ 241 \times 28,1\%$ ✓S = 14 960,72 ✓S = 14 961 ✓CA	1M Method 1S Simplification 1S Using 28,1% 1CA Female educators (4)	D L2
5.1.8	$647 + 619$ ✓RT = $\frac{1\ 266}{5\ 524}$ ✓M = $\frac{633}{2\ 762}$ ✓CA	1RT Adding correct values 1M Numerator and denominator 1CA Answer (3)	P L2
5.2.1	$P = \frac{213\ 225}{294\ 204} \times 100\%$ ✓RT ✓M = 72,48 % ✓CA	1RT Correct values 1M % Concept 1CA P-value as % NPR (3)	D L2

5.2.2	$\begin{aligned} \text{Difference}(\%) &= 54,5\% - 45,0\% \quad \checkmark\text{RT} \\ &= 9,5\% \quad \checkmark\text{CA} \end{aligned}$	1RT Correct values 1M Subtraction 1CA Difference (3)	D L1													
5.3.1	52 185, 80 369, <u>333 251</u> , 550 684, 738 340 $\checkmark\text{A}$ Median = 333 251 $\checkmark\text{A}$	AO 1A Arrangement (ascending or descending) 1A Median value (2)	D L1													
5.3.2	<div style="text-align: center;"> <p>Quintile schools with their number of learners</p> <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <caption>Data for Quintile schools with their number of learners</caption> <thead> <tr> <th>Quintile</th> <th>Number of learners</th> </tr> </thead> <tbody> <tr> <td>Q1</td> <td>550 000</td> </tr> <tr> <td>Q2</td> <td>330 000</td> </tr> <tr> <td>Q3</td> <td>740 000</td> </tr> <tr> <td>Q4</td> <td>50 000</td> </tr> <tr> <td>Q5</td> <td>80 000</td> </tr> </tbody> </table> </div>			Quintile	Number of learners	Q1	550 000	Q2	330 000	Q3	740 000	Q4	50 000	Q5	80 000	
Quintile	Number of learners															
Q1	550 000															
Q2	330 000															
Q3	740 000															
Q4	50 000															
Q5	80 000															
	1A For the first 2 bars correctly plotted 1A For Q3 bar only 1A For the last 2 bars correctly plotted (3)	L2														
	[33]															
	TOTAL: 150															