



**NATIONAL
SENIOR CERTIFICATE**

GRADE 11

NOVEMBER 2020

**MATHEMATICAL LITERACY P1
MARKING GUIDELINE
EXEMPLAR**

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/Reading from a graph/Read from map
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

This marking guideline consists of 8 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 [23 marks]			
Ques.	Solution	Explanation	T&L
1.1.1	Annual gross salary = R10 500 × 12 ✓ M = R126 000 ✓ A	1M Multiply by 12 1A Gross per annum (2)	F L1
1.1.2	Monthly food expense = R10 500 × 36% ✓ M = R3 780 ✓ CA	1M % Calculation 1CA Amount (2)	F L1
1.1.3	Housing % : Food % = 21% : 36% ✓ M = 7 : 12 ✓ CA	1M Correct values and order 1CA Simplest form (2)	F L1
1.1.4	$\text{Savings \%} = 100\% - (21\% + 36\% + 10\% + 1,9\%)$ $= 100\% - 68,9\% \checkmark M$ $= 31,1\% \checkmark CA$	1M Adding correct values 1M Subtracting from 100 1CA Percentage (3)	F L1
1.2.1	Primary data ✓✓ A	2A Correct data type (2)	D L1
1.2.2	41 ✓✓ RT	2RT Highest mark (2)	D L1
1.2.3	Median is the middle value of a set of data which is arranged from small to big. ✓✓ A	2A Explanation (2)	D L1
1.2.4	35 ✓✓ A	2A Correct mark (2)	D L1
1.2.5	3 ✓✓ RT	2RT No. of learners failed (2)	D L1
1.3.1	Loss is when the cost is more than the income. ✓✓ A OR Loss incurred when selling price is less than cost price of an item. ✓✓ A	2A Correct explanation (2)	F L1
1.3.2	$\% \text{ loss} = \frac{50}{750} \times 100\% \checkmark M$ $= 6,67\% \checkmark CA$	1M Fraction multiplied by 100% 1CA Percentage NPR (2)	F L1
			[23]

QUESTION 2: FINANCE [30 marks]			
Ques.	Solution	Explanation	Topic /Level
2.1.1	SmartMAX Focussed Education Plan 1 ✓✓ RT	2A Correct investment plan (2)	F L1
2.1.2	$\begin{aligned} \text{Number of units} &= \frac{8266,470}{100} \checkmark C \\ &= R82,6647 \checkmark CA \\ &= \frac{8038,07}{82,6647} \checkmark M \\ &= 97,23703104 \checkmark CA \end{aligned}$	1C Converted to Rands 1CA Value 1M Division 1CA No. of units (4)	F L2
2.1.3	$\begin{aligned} \% \text{ loss} &= 12\,924,75 - 6\,995,25 \checkmark M \\ &= R5\,929,50 \checkmark S \\ &= \frac{5929,50}{12924,75} \times 100 \checkmark M \\ &= 45,88\% \end{aligned}$ <p style="text-align: center;">OR</p> $\begin{aligned} \text{Percentage loss} &= \frac{6995,25}{12924,75} \times 100 \checkmark M \\ &= 54,12\% \checkmark S \\ &= 100\% - 54,12\% \checkmark M \\ &= 45,88\% \end{aligned}$	1M Subtraction of values 1S Simplification 1M Dividing correct values 1M Multiply by 100% <p style="text-align: center;">OR</p> 1M Dividing correct values 1M Multiply by 100% 1S Simplification 1M Subtraction of % (4)	F L3
2.1.4	$\begin{aligned} B &= R8\,038,07 - R6\,995,25 \checkmark MA \\ &= R1\,042,82 \checkmark CA \end{aligned}$	1MA Subtraction 1CA Correct answer (2)	F L2
2.1.5	R765,57 ✓✓ RT	2RT Correct value (2)	F L2
2.1.6	$\begin{aligned} \% \text{ increase} &= \frac{366,02 - 332,75}{332,75} \times 100 \checkmark SF \\ &= 9,998\% \checkmark S \\ &= 10\% \checkmark R \end{aligned}$	1RT Correct values 1SF Substitution 1S Simplification 1R Nearest % (4)	F L2
2.2.1	Number of plates ✓✓ RT	2RT Number of plates (2)	F L2
2.2.2	Fixed expenses = R500 ✓✓ RT	2RT Fixed expenses (2)	F L2
2.2.3	Income = R50 × Number of plates sold ✓ M ✓ A	1M Multiplication with R50 1A Correct formula (2)	F L2
2.2.4	R0 OR (No Profit) ✓✓ RT	2RT No profit (2)	F L2

2.2.5	<p>Loss for 8 plates = Expenses – Income ✓RT ✓RT = 740 – 400 ✓M = R340 ✓A</p> <p style="text-align: center;">OR</p> <p>Expenses = 500 + 8 × 30 = R740 ✓M Income = 50 × 8 = R400 ✓M Loss = 740 – 400 = R340 ✓A</p>	<p>1RT R740 1RT R400 1M Subtraction 1A Loss (From graph allow 340±10)</p> <p style="text-align: center;">OR</p> <p>1M for R740 1M for R400 1M subtraction 1A for R340 exact answer (4)</p>	F L3
[30]			

QUESTION 3: DATA HANDLING (18 marks) AND PROBABILITY (3 marks)			
Ques.	Solution	Explanation	T/L
3.1	Total number of spas $= 30\,394 + 13\,856 + 3\,984 + 6\,057 + 46\,282 + 48\,679$ $= 149\,252$ ✓M ✓A	1M Adding correct values 1A Total (2)	D L1
3.2	Mean $= \frac{149\,252}{6}$ ✓M $= 24\,875,33$ $= 24\,875$ ✓R	CA from 3.1 1M Division 1R Whole number (2)	D L2
3.3	European spas as a % $= \frac{46\,282}{149\,252} \times 100$ ✓M $= 31\%$ ✓CA	1M Fraction with correct values and multiplication by 100 1CA Percentage (2)	D L2
3.4	Range $= 48\,679 - 3\,984$ $= 44\,695$ ✓S Number of regions above range = 2 CA ✓	1S Calculate range 1CA Number of regions (2)	D L3
3.5	$30\,394 : 48\,679 = 1 : \frac{48\,679}{30\,394}$ ✓M ✓M $= 1 : 1,60$ ✓CA	1M Ratio 1M Fraction 1CA Unit ratio NPR (3)	D L3
3.6	Revenue in sub-saharan Africa $= 6,6 - 5,0$ ✓M $= 1,6$ ✓S Total revenue for spas $= 22,9 + 6,6 + 1,6 + 2,8 + 33,3 + 26,5$ ✓M $= \$93,7$ billion ✓CA	1M Subtraction 1S Simplification 1M Addition 1CA Total revenue Penalise 1 mark if not in billions (4)	D L3
3.7	1,6; 2,8; 6,6; 22,9; 26,5; 33,3 ✓M Median revenue $= \frac{6,6 + 22,9}{2}$ ✓M $= \$14,75$ billion ✓CA	CA the value \$1,6 from 3.6 included in the data 1M Arranging in order of descending or ascending 1M Concept of median 1CA Answer in billions (3)	D L3
3.8	P (Regions with more than 40 000 spas) ✓RT $= \frac{2}{6} \times 100$ ✓M $= 33,33\%$ ✓CA	1RT Correct numerator and denominator 1M Multiplication by 100 1CA Percentage NPR (3)	P L2
			[21]

QUESTION 4: FINANCE (12 marks), DATA HANDLING (11 marks) AND PROBABILITY (3 marks)															
Ques.	Solution	Explanation	T/L												
4.1	<p>Cost =</p> <table> <tr> <td>Kilolitre</td> <td>Cost</td> </tr> <tr> <td>6</td> <td>$6 \times 0 = 0$ ✓M</td> </tr> <tr> <td>9</td> <td>$9 \times 9,35 = R84,15$</td> </tr> <tr> <td>10</td> <td>$10 \times 11,16 = R111,6$ ✓M</td> </tr> <tr> <td>Total = 25 litres</td> <td>$84,15 + 111,60 = R195,75$ ✓M</td> </tr> <tr> <td></td> <td>$R195 \times 115\% = R225,11$ ✓CA</td> </tr> </table> <p>OR</p> <p>Cost = $(6 \times 0) + (9 \times 9,35) + (10 \times 11,16)$ ✓M $= R84,15 + R111,60$ $= R195,75$ ✓CA</p> <p>Including VAT = $R195,75 \times 15\%$ ✓M $= R29,3625$ $= R195,75 + R29,3625$ $= R225,11$ ✓CA</p> <p>Increased block rate tariffs to encourage saving of water ✓A</p> <p>OR</p> <p>Also assist small businesses or families with free water ✓A</p> <p>Accept any other sound reason.</p>	Kilolitre	Cost	6	$6 \times 0 = 0$ ✓M	9	$9 \times 9,35 = R84,15$	10	$10 \times 11,16 = R111,6$ ✓M	Total = 25 litres	$84,15 + 111,60 = R195,75$ ✓M		$R195 \times 115\% = R225,11$ ✓CA	<p>1M Cost of first 6 kℓ</p> <p>1M Cost for both 9 and 10 kilolitres</p> <p>1CA Total cost</p> <p>1M Multiply by 15%</p> <p>1CA Cost including VAT</p> <p>1A Reason</p>	F L4
Kilolitre	Cost														
6	$6 \times 0 = 0$ ✓M														
9	$9 \times 9,35 = R84,15$														
10	$10 \times 11,16 = R111,6$ ✓M														
Total = 25 litres	$84,15 + 111,60 = R195,75$ ✓M														
	$R195 \times 115\% = R225,11$ ✓CA														
4.2	<p>$R0,019 = 1$ RWF</p> <p>R? = $745\,614,04$ RWF ✓M</p> <p>R? = $0,019 \times 745\,614,04$ ✓M $= R14\,166,66676$ ✓S</p> <p>Bank charges = $14166,66676 \times \frac{10}{100}$ ✓M $= R1\,416,66676$ ✓A</p> <p>Andile received = $R14\,166,66676 - 1\,416,66676$ ✓M $= R12\,750$</p> <p>Statement is valid. ✓A</p> <p>OR</p> <p>Bank charges = $\frac{10}{100} \times 745\,614,04$ RWF ✓M $= 74\,561,404$ ✓A</p> <p>Andile received in RWF = $745\,614,04 - 74\,561,404$ ✓M $= 671\,052,636$ ✓S</p> <p>In Rands: R0,019 = 1 RWF R? = $671\,052,636$ RWF ✓M</p> <p>Andile received = $R0,019 \times 671\,052,636$ ✓M $= R12\,750$</p> <p>Statement is valid ✓CA</p>	<p>1M Concept of ratio</p> <p>1M Multiplication</p> <p>1S Simplification value in R</p> <p>1M Multiplication of 10%</p> <p>1A Value of 10%</p> <p>1M Subtraction</p> <p>1A Valid</p> <p>OR</p> <p>1M Multiplication of 10%</p> <p>1A Value of 10%</p> <p>1M Subtraction</p> <p>1S Simplification value</p> <p>1M Concept of ratio</p> <p>1M Multiplication</p> <p>1CA Valid</p>	F L4												

4.3.1	Total absentees = 67 ✓ M Absentees on Wednesday = 16 ✓ A $P(\text{absent on Wed}) = \frac{16}{67}$ ✓ CA	1M Addition to 67 1A Absentees on Wed 1CA Fraction (3)	P L2																		
4.3.2	<p style="text-align: center;">Number of absent learners during the week</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <caption>Data from Bar Chart</caption> <thead> <tr> <th>Day</th> <th>Girls</th> <th>Boys</th> </tr> </thead> <tbody> <tr> <td>Monday</td> <td>4</td> <td>5 ✓ A</td> </tr> <tr> <td>Tuesday</td> <td>6 ✓ A</td> <td>3</td> </tr> <tr> <td>Wednesday</td> <td>8</td> <td>8</td> </tr> <tr> <td>Thursday</td> <td>7 ✓ A</td> <td>9 ✓ A</td> </tr> <tr> <td>Friday</td> <td>10</td> <td>7 ✓ A</td> </tr> </tbody> </table>	Day	Girls	Boys	Monday	4	5 ✓ A	Tuesday	6 ✓ A	3	Wednesday	8	8	Thursday	7 ✓ A	9 ✓ A	Friday	10	7 ✓ A	1A for Monday boys at 5 1A for Tuesday girls at 6 1A for Thurs for girls at 7 1A for Thurs for boys at 9 1A for Fri for boys at 7 (5)	D L2
Day	Girls	Boys																			
Monday	4	5 ✓ A																			
Tuesday	6 ✓ A	3																			
Wednesday	8	8																			
Thursday	7 ✓ A	9 ✓ A																			
Friday	10	7 ✓ A																			
4.4.1	Value of C: $64,2 = \frac{C + 1\ 853}{30}$ ✓ M $64,2 \times 30 = C + 1\ 853$ $C = 1\ 926 - 1\ 853$ ✓ M $= 73$ ✓ CA Answer invalid ✓ O	1M Addition (1 853) and division by 30 1M Subtraction 1CA Value of C 1A Invalid (4)	D L4																		
4.4.2	$D = 0$ ✓ A No learners scored 30 – 39 marks ✓ A	1A Value of D 1A Explanation (CA value of D from 4.4.1 included in the data) (2)	D L4																		
[26]																					
TOTAL:			100																		