



NATIONAL SENIOR CERTIFICATE

GRADE 12

SEPTEMBER 2024

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/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 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.

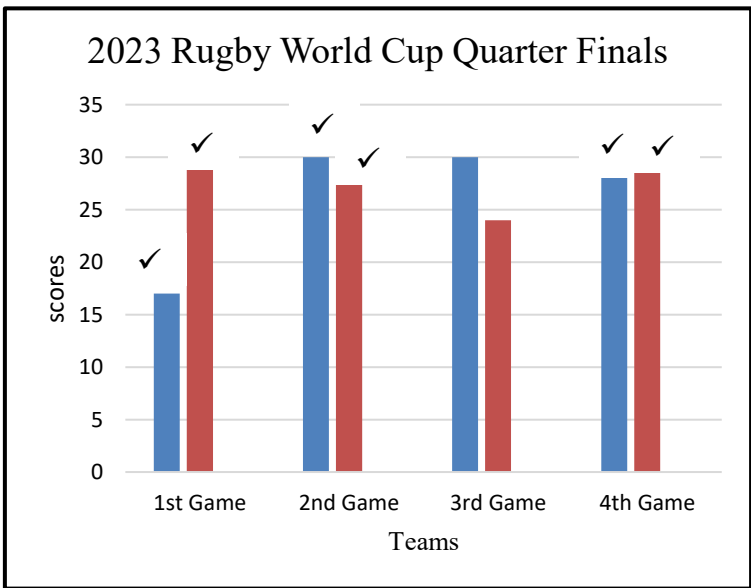
QUESTION 1 [30 MARKS]			
Ques.	Solution	Explanation	T&L
1.1.1	$A = R20\,187,00 + R612,20 \quad \checkmark \text{ SF}$ $= R20\,799,20$ $= R20\,799\,200 \quad \checkmark \text{ A}$	1SF correct substitution 1A simplification (2)	F L1
1.1.2	Opening balance is the amount of money in an account at the beginning of the statement period. $\checkmark\checkmark \text{ A}$ OR Opening balance is the balance brought forward in the account at the beginning of the statement period. $\checkmark\checkmark \text{ A}$	2A definition (2)	F L1
1.1.3	$\checkmark \text{ RT} \quad \checkmark \text{ MA}$ $= (R4\,102,70 + R500,00 + R1000,00 + R1000,00)$ thousand $= R6\,602,70 \text{ thousand}$ OR $\checkmark \text{ RT} \quad \checkmark \text{ MA}$ $= R\,4\,102\,700,00 + R500\,000,00 + R1000\,000,00 +$ $R1\,000\,000,00$ $= R6\,602\,700$	1RT correct values 1MA adding correct values OR 1RT correct values 1MA adding correct values (2)	F L1
1.1.4	$\checkmark \text{ MA}$ $B = R19\,028,00 - (R1000,00 + R9\,000,00 + R288,00 + R350,00 + R2890,00) \text{ thousand}$ $= R5\,500 \text{ thousand} \quad \checkmark \text{ CA}$ OR $\checkmark \text{ MA}$ $B = R19\,028\,000,00 - (R100\,000 + R9\,000\,000 + 288\,000 + 350\,000 + R2\,890\,000)$ $B = R5\,500\,000 \quad \checkmark \text{ CA}$	1MA subtracting from total 1CA value of B OR 1MA subtracting from total 1CA value of B (2)	F L1
1.1.5	Total expenditure $R19\,028,00 \text{ thousand} / R19\,028\,000,00$ Nineteen million and twenty eight thousand rands $\checkmark\checkmark \text{ A}$	2A correct value in words NPU (2)	F L
1.1.6	$\text{Difference} = R3\,000,00 - R288,00 \quad \checkmark \text{ RT} \quad \checkmark \text{ M}$ $= R2\,712,00 \quad \checkmark \text{ A}$	1 RT correct values 1M subtracting 1A simplification (3)	F L1

1.2.1	Cost = $\frac{R249,00}{60}$ ✓MA = R4,15 ✓CA	1MA dividing by 60 1 CA simplification (2)	F L1
1.2.2	Profit = R5,00 – R4,15 ✓MA = R0,85 ✓CA	1MA calculating profit 1CA simplification (2)	F L1
1.2.3	Number of pens sold = 4 x 60 ✓RT = 240 pens ✓A	1A correct number 1A simplification (2)	F L1
1.2.4	% profit = $\frac{\text{Profit}}{\text{Cost price}} \times 100$ = $\frac{R0,85}{R4,15} \times 100$ ✓M = 20,48% ✓CA	1M percentage calculation 1CA simplification (2)	F L1
1.2.5	Impossible OR 0 ✓✓A	2A correct probability (2)	P L1
1.3.1	Friday ✓✓A	2A correct day (2)	F L1
1.3.2	✓RT % discount = $\frac{R499,00 - R336,75}{R499,00} \times 100$ ✓MA = 32,52% ✓CA	1RT both values 1MA percentage calculation 1CA simplification (3)	F L1
1.3.3	Price before VAT = $R499,00 \div \frac{115}{100}$ OR 1,15 ✓A = R433,91 ✓CA OR VAT = $R499,00 \times \frac{15}{115}$ ✓MA = R65,09 = R499,00 – R65,09 = R433,91 ✓CA OR VAT = $R499,00 \times \frac{100}{115}$ ✓A = R433,91 ✓CA	1A $\div 1,15$ 1CA simplification 1CA simplification 1MA correct value x $\frac{15}{115}$ 1CA simplification 1A $\frac{100}{115}$ 1CA simplification (2)	F L2
		[30]	

QUESTION 2 [35 MARKS]			
Ques.	Solution	Explanation	T&L
2.1.1	R30 533 ✓✓A	2A correct salary (2)	F L1
2.1.2	Monthly tax credit = R4 164 ÷ 12 ✓A = R347,00 ✓A	1A dividing by 12 A1 simplification (2)	F L2
2.1.3	✓RT Contribution = R86 238 x $\frac{36,5}{100}$ ✓MA = R31 476,87 ✓A = R31 476,87 ÷ 5 ✓MA = R 6 295,37 ✓CA	1RT correct value 1MA multiplying by 36,5% 1A answer 1MA dividing by 5 1CA simplification (5)	F L2
2.2.1	Exchange rate is the value of one currency relative to the value of another currency. ✓✓	2A definition (2)	F L2
2.2.2	Weaker ✓✓	2A Weaker (2)	F L2
2.2.3	R1 = 0,05 US dollar = $\frac{300 \text{ US dollar}}{0,05}$ ✓ = R6000,00 ✓ Joy's sister is correct. ✓	1MA dividing by 0,05 1A simplification 1A conclusion (2)	F L2
2.3.1	Amount received = R334 159 x $\frac{1}{3}$ ✓ = R111 386,33 ✓	1A correct value 1A multiplying $\frac{1}{3}$ 1A simplification (3)	F L2

2.3.2	<p>Amount interest</p> <p>1st six months = $111\,386,33 \times \frac{4,5}{100} \checkmark \text{MA}$ $= R5\,012,38 + R111\,386,33$ $= R116\,398,71485 \checkmark \text{A}$</p> <p>2nd six months = $R116\,398,71485 \times \frac{4,5}{100}$ $= R5\,237,9421 + R116\,398,71485$ $= R121\,636,6570 \checkmark \text{CA}$</p> <p>3rd six months = $R121\,636,6570 \times \frac{4,5}{100}$ $= R5\,473,649 + R121\,636,6570$ $= R127\,110,3065 \checkmark \text{CA}$</p> <p>4th six months = $R127\,110,3065 \times \frac{4,5}{100}$ $= R5\,719,9637 + R127\,110,3065$ $= R132\,830,2702$ $= R132\,830,27 \checkmark$</p> <p>Interest earned = $R132\,830,27 - R111\,386,33 \checkmark \text{M}$ $= R21\,443,94 \checkmark \text{CA}$</p> <p>Statement is incorrect. $\checkmark \text{O}$</p> <p style="text-align: center;">OR</p> <p>Amount interest</p> <p>1st six months = $R111\,386,33 \times 1,045 \checkmark \text{MA}$ $= R116\,398,71 \checkmark \text{A}$</p> <p>2nd six months = $R116\,398,71 \times 1,045$ $= R121\,636,66 \checkmark \text{CA}$</p> <p>3rd six months = $R121\,636,66 \times 1,045$ $= R127\,110,31 \checkmark \text{CA}$</p> <p>4th six months = $R127\,110,31 \times 1,045$ $= R132\,830,27 \checkmark \text{CA}$</p> <p>Interest earned = $R132\,830,27 - R111\,386,33$ $= R21\,443,94 \checkmark$</p> <p>Statement is incorrect.</p> <p style="text-align: center;">OR</p> <p>Amount interest</p> <p>$\checkmark \text{MA} \quad \checkmark \text{MA} \quad \checkmark \text{MA} \quad \checkmark \text{MA}$ $= R111\,386,33 \times 1,045 \times 1,045 \times 1,045 \times 1,045$ $= R132\,830,27 \checkmark \text{CA}$ $= R132\,830 - R111\,386,33 \checkmark \text{MA}$ $= R21\,443,94 \checkmark \text{CA}$</p> <p>Statement is incorrect. $\checkmark \text{O}$</p>	<p>CA from QUESTION 2.3.1</p> <p>MA calculating 4,5%</p> <p>1A interest 1st six months</p> <p>1CA amount 2nd six months</p> <p>1CA amount 3rd six months</p> <p>1CA final answer 1M subtracting values 1CA simplification 1O conclusion</p> <p>1MA calculating 4,5% 1A amount 1st six months</p> <p>1CA 2nd six months</p> <p>1CA 3rd six months</p> <p>1CA final answer</p> <p>1CA difference 1O conclusion</p> <p>4MA multiplying by 1,045 1CA simplification 1MA difference 1CA simplification 1O conclusion</p> <p style="text-align: right;">(8)</p>	F L4
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2.4	<p>10 Mbps LTE = R299,00 x 24 ✓ MA</p> <p>= R7 176 – R3 600,00 ✓ MA</p> <p>= R 3 576,00 x 4 ✓ MA</p> <p>= R14 304 ✓ A</p> <p>20 Mbps LTE = R399,00 x 24</p> <p>= R9 576,00 – R6 000</p> <p>= R3 576 x 2 ✓ MA</p> <p>= R7 152,00 ✓ CA</p> <p>50 Mbps fibre optic = R749,00 x 24</p> <p>= R17 976 – R2 400</p> <p>= R 15 576 ✓ CA</p> <p>Mr walker's statement is not valid. ✓ O</p>	<p>1MA multiplying by 24</p> <p>1MA subtracting savings</p> <p>1MA multiplying by 4</p> <p>1A amount for 10 Mbps</p> <p>1MA multiplying by 2</p> <p>1CA amount for 20 Mbps</p> <p>1CA amount for 50 Mbps</p> <p>1O conclusion</p>	<p>F</p> <p>L4</p> <p>(8)</p>
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QUESTION 3 [27 MARKS]			
Ques.	Solution	Explanation	T&L
3.1.1	$A = 82,3\% - 85,7\% \checkmark \text{ MA}$ $= -3,4\% \checkmark \text{ CA}$	1MA subtracting correct values 1CA simplification (2)	D L1
3.1.2	Mathematical Literacy $\checkmark \checkmark \text{ RT}$	2RT correct subject (2)	D L1
3.1.3	Range = max. value – min. value $= 8,5\% - (-3,4\%) \checkmark \text{ RT} \checkmark \text{ M}$ $= 8,5\% + 3,4\% \checkmark \text{ MA}$ $= 11,9\% \checkmark \text{ A}$	1RT correct values 1 M subtract min from max 1MA adding correct values 1A simplification (4)	D L1
3.1.4	Mean $\frac{78,2\% = (76,9 + 80,5 + 81,8 + B + 86,2 + 87,7 + 75,6 + 82,3 + 63,5 + 76,2)}{10} \checkmark \text{ M}$ $78,2\% = \frac{710,2\% + B}{10} \checkmark \text{ M}$ $B = 782\% - 710,2\% \checkmark \text{ M}$ $B = 71,3\% \checkmark \text{ CA}$	1RT correct values 1M concept of mean 1M changing the subject 1CA simplification (4)	D L2
3.1.5	$P (\text{subject with \% decrease}) = \frac{2}{10} \checkmark \text{ RT}$ $= 0,2 \checkmark \text{ CA}$	1RT numerator 1A denominator 1CA simplification (3)	P L2
3.2.1	RSA $\checkmark \checkmark \text{ A}$	2A correct team (2)	D L2
3.2.2	New Zealand $\checkmark \checkmark \text{ A}$	2A correct team (2)	D L2
3.2.3		$\checkmark \checkmark \checkmark \checkmark \checkmark \checkmark$ one mark for each bar (6)	D L2
3.2.4	No mode $\checkmark \checkmark \text{ A}$	2A correct mode	D L1

4.2.3	<p>✓ O</p> <p>For high jump you measure the height the athletes jumps and for long jump and shot put you measure the distance an athlete throws. ✓✓O</p>	<p>1O High jump</p> <p>2O shot put and long jump (3)</p>	<p>D</p> <p>L2</p>
4.2.4	<p>3,80 m 4,10 m; 4,10 m; 4,40 m; 4,50 m; 4,60 m; 4,80 m; 5,20 m ✓A</p> <p>Median = $\frac{4,40 \text{ m} + 4,50 \text{ m}}{2}$ ✓MA</p> <p>= $\frac{8,9 \text{ m}}{2}$</p> <p>= 4,5m ✓CA</p> <p>Range = max value – min value</p> <p>= 5,20 m – 3,80 m ✓A</p> <p>= 1,4m ✓CA</p> <p>The statement is correct. The range is small so the results are closer to the median. ✓J</p>	<p>1A order, ascending or descending</p> <p>1MA concept of a mean</p> <p>1CA simplification</p> <p>1A difference</p> <p>1CA simplification</p> <p>1Justification</p> <p>(6)</p>	<p>D</p> <p>L2</p>

QUESTION 5 [25 MARKS]			
Ques.	Solution	Explanation	T&L
5.1.1	<p>Consumption = 32 kℓ RT ✓MA ✓RT 6 kℓ x R18,12 kℓ = R108,72 ----- 32 kℓ – 6 kℓ = 26 kℓ 9 kℓ x R29,26 kℓ = R263,34 ----- 26 kℓ – 9 kℓ = 17 kℓ 15 kℓ x R36,58 = R548,70 ----- 17 kℓ – 15 kℓ = 2 kℓ 2 kℓ x R45,52 = <u>R91,04</u> = R1 011,80 ✓CA = R1 011,80 + R59,96 = R1 071,76 ✓A</p> <p>✓A Grand total = R1 071,76 x 1,15 ✓A = R1 232,52 ✓CA</p> <p style="text-align: center;">OR</p> <p>✓A Grand total = R1 071,76 x $\frac{15}{100}$ = R160,76 + R1 071,76 ✓A = R1 232,52 ✓CA</p>	<p>1RT correct consumption 1MA all (4) correct kℓ 1RT 4 tariffs</p> <p>1CA finding total charge 1A simplification 1A correct amount 1A x by 1,15 1CA simplification 1A correct amount 1 A adding VAT 1CA simplification (8)</p>	F L3
5.1.2	<p>Median = $\frac{R29,26 + R36,58}{2}$ ✓RT ✓A = R32,92 ✓CA</p>	<p>1RT correct values 1A concept of a mean 1CA simplification (3)</p>	D L2
5.2	<p>0 to 6kℓ bracket: ✓RT = $\frac{R18,12 - R16,18}{R16,18} \times 100$ ✓MA = 11,99% ✓A</p> <p>7 kℓ to 15 kℓ bracket: ✓RT = $\frac{R29,86 - R26,68}{R26,68} \times 100$ ✓MA = 12% ✓CA</p> <p>7 kℓ to 15 kℓ bracket had a high percentage increase. ✓O</p>	<p>1RT correct values 1MA multiplying correct values with 100 1A simplification</p> <p>1RT correct values 1MA multiplying by 100 1CA simplification 1O opinion (7)</p>	F L2

5.3	<p>2,6 ; 74,7; 244,0 ; 255,4 ; 265,3 ; 271,9 ; 387,3 ; 480,6 ✓MA</p> <p>$Q_2 = \frac{255,4 + 265,3}{2} \checkmark A$</p> <p>$= 260,5 \text{ billion } \checkmark CA$</p> <p>$Q_1 = \frac{74,7 + 244,0}{2}$</p> <p>$= 159,35 \text{ billion } \checkmark CA$</p> <p>$Q_3 = \frac{271,9 + 387,3}{2}$</p> <p>$= 329,6 \text{ billion } \checkmark CA$</p> <p>$IQR = Q_3 - Q_1$</p> <p>$= 329,6 \text{ billion} - 159,35 \text{ billion } \checkmark M$</p> <p>$= 170,25 \text{ billion } \checkmark CA$</p>	<p>1MA order, ascending or descending</p> <p>1A concept of median</p> <p>Or other learners will indicate the mean on the arranged data.</p> <p>1CA Q_2</p> <p>1CA Q_1</p> <p>1CA Q_3</p> <p>1M subtracting quartile</p> <p>1CA IQR value (No penalty for omitting billion.)</p> <p>(7)</p>	D L4
		[25]	
		TOTAL: 150	