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GRADE 11

NOVEMBER 2019

**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/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 9 pages.

NOTE/LET WEL:

- If a candidate answers a question TWICE, mark the FIRST attempt ONLY.
Indien 'n kandidaat 'n vraag TWEE keer beantwoord, merk SLEGS die EERSTE poging.
- Consistent accuracy applies in ALL aspects of the marking guideline.
Volgehoue akkuraatheid geld deurgaans in ALLE aspekte van die nasienriglyn.
- If a candidate crossed out an attempt of a question and did not redo the question, mark the crossed-out attempt.
Indien 'n kandidaat 'n poging vir 'n vraag deurgetrek het en nie die vraag weer beantwoord het nie, merk die poging wat deurgetrek is.
- The mark for substitution is awarded for substitution into the correct formula.
Die punt vir substitusie word vir substitusie in die korrekte formule toegeken.

QUESTION 1 [20]			
Ques.	Solution	Explanation	T&L
1.1.1	5 steps ✓✓ RT	2RT steps (2)	F L1
1.1.2	Cutting ✓✓ RT	2RT correct process Allow step 3 (2)	F L1
1.1.3	Estimated costs = \$0,90 + \$0,60 + \$0,25 + \$1,00 + \$0,40 ✓M = \$3,15 ✓M	1M adding correct values 1A answer (2)	F L1
1.1.4	www.graincreative.com ✓✓ RT	2RT correct website (2)	F L1
1.1.5	0,25 : 1,00 ✓RT 1 : 4 ✓CA	1RT correct values in ratio form 1CA simplified (2)	F L1
1.1.6	Time = 8:25 + 4:45 ✓M = 13:10 ✓CA OR 1 : 10 pm ✓CA	1M adding hours 1CA answer (2)	M L1
1.2.1	Frequency is the number of times shoe size appears. ✓✓ A	2A Explanation (2)	D L1
1.2.2	Total number = 3 + 12 + 22 + 18 + 3 + 2 ✓M = 60 ✓A	1M addition 1A number of learners (2)	D L1
1.2.3	Size 6 ✓✓ RT	2RT correct size (2)	D L1
1.2.4	Probability is a chance of a specific event occurring. ✓✓ A	2A Explanation (2)	P L1
		[20]	

QUESTION 2: FINANCE [27]			
Ques.	Solution	Explanation	Topic /Level
2.1.1	61,50 cents per Kilowatt hour ✓✓ RT	2A correct value (2)	L1
2.1.2	Units used = $1\,679 - 1\,468$ = 211 kWh ✓ A Step 1 = $150\text{ kWh} \times 61,50$ = 9 225 cents ✓ A Step 2 = $61 \times 82,50$ = 5 032,5 cents ✓ A Total charge = $9\,225 + 5\,032,5$ = 14 257,5 ✓ CA = $\frac{14\,257,5}{100}$ ✓ C = R142,58 ✓ CA	1A total units 1A answer 1A multiplication 1CA total charge 1C Conversion 1CA converted answer in Rands and cent (6)	L3
2.2.1	Reduction = $2\,499 - 1\,948$ = 551 ✓ M Percentage reduction = $\frac{551}{2\,499} \times 100$ ✓ M = 22% ✓	1M the reduction 1M fraction multiply by 100% (2)	L1
2.2.2	$\text{VAT amount} = \frac{15}{115} \times 1\,948$ ✓ M = R254,09 ✓ A <p style="text-align: center;">OR</p> $\text{Price without VAT} = \frac{100}{115} \times 1\,948$ ✓ M = R1 693,91 $\text{VAT} = R1\,948 - R1\,693,91$ ✓ M = R254,09 ✓ M	1M multiply by 15/115 1M multiply by 1 948 1A Correct answer 1M amount without VAT 1M subtraction 1A VAT	L1

Ques.	Solution	Explanation	T&L
	<p style="text-align: center;">OR</p> $\text{Price without VAT} = \frac{1\,948}{1,15} \checkmark \text{ M}$ $= \text{R1 693,91}$ $\text{VAT} = \text{R1 948} - \text{R1 693,91} \checkmark \text{ M}$ $= \text{R254,09} \checkmark \text{ A}$	<p>1M dividing by 1,15</p> <p>1M subtraction 1A answer (3)</p>	
2.3.1	<p>Inflation is the increase of the price of a typical basket of goods and services calculated over a period of time. $\checkmark \checkmark \text{ A}$</p> <p style="text-align: center;">OR</p> <p>Inflation is the measure of decrease in purchasing power of a nation's currency over a period of time. $\checkmark \checkmark \text{ A}$</p>	<p>1A for the increase 1A for the period of time OR 1A for the decrease in purchasing power 1A for the period of time (2)</p>	L1
2.3.2	<p>Price of the laptop in 2018 = $\text{R5 999} \times 104,5\% \checkmark \checkmark \text{ M}$</p> $= \text{R6 268,96} \checkmark \text{ CA}$ <p style="text-align: center;">OR</p> $\text{R5 999} \times 1,045 \checkmark \checkmark \text{ M}$ $= \text{R6 268,96} \checkmark \text{ CA}$ <p style="text-align: center;">OR</p> $\text{Increase} = \frac{4,5}{100} \times 5\,999$ $= \text{R269,96} \checkmark \text{ M}$ $\text{2018 price} = 5\,999 + 269,96 \checkmark \text{ M}$ $= \text{R6 268,96} \checkmark \text{ CA}$	<p>1M Multiplication to get price of 2018 1M using 104,5% 1CA answer</p> <p>2M Multiply by 1,045 1CA answer</p> <p>1M for the increase</p> <p>1M adding to 5 999</p> <p>1CA Answer (3)</p>	L2
2.4.1	$\text{Amount invested} = \frac{75}{100} \times 50\,000 \checkmark \text{ M}$ $= \text{R37 500} \checkmark \text{ A}$ <p style="text-align: center;">OR</p> $0,75 \times 50\,000 \checkmark \text{ M}$ $= \text{R37 500} \checkmark \text{ A}$	<p>1M concept 75 % 1A answer (2)</p>	L1

Ques.	Solution	Explanation	T&L
2.4.2	<p>Interest in the first year $= \frac{7,5}{100} \times 37\,500 \checkmark M$ $= R2\,812,50 \checkmark A$</p> <p>Amount to be invested in 2nd year $= R37\,500 + R2\,812,50$ $= R40\,312,50 \checkmark CA$</p> <p>Interest in 2nd year $= \frac{7,5}{100} \times 40\,312,50$ $= R3\,023,44 \checkmark CA$</p> <p>Total interest in 2 years $= 2\,812,50 + 3\,023,44$ $= R5\,835,94 \checkmark CA$</p> <p style="text-align: center;">OR</p> <p>Interest in the first year $= \frac{7,5}{100} \times 37\,500$ $= R2\,812,50 \checkmark M$</p> <p>End of first year $= R37\,500 + R2\,812,50$ $= R40\,312,50 \checkmark M$</p> <p>Interest in 2nd year $= \frac{7,5}{100} \times 40\,312,50$ $= R3\,023,44 \checkmark CA$</p> <p>End of 2nd year $= R40\,312,50 + R3\,023,44$ $= R43\,335,94$</p> <p>Total interest in 2 years $= R43\,335,94 - R37\,500 \checkmark MA$ $= R5\,835,94 \checkmark A$</p> <p style="text-align: center;">OR</p> <p>$R37\,500 \times 1,075 \times 1,075 \checkmark M$ $\checkmark CA$ $= R43\,335,9375 - R37\,500 \checkmark M$ $= R5\,835,94 \checkmark CA$</p>	<p>CA from 2.4.1 1M multiplying correct values 1A 1st year interest</p> <p>1CA amount to be invested in 2nd year</p> <p>1CA interest in 2nd year</p> <p>1CA Total interest</p> <p>1MA interest calculation</p> <p>1MA Amount with interest</p> <p>1CA interest 2nd year</p> <p>1MA subtracting correct values 1CA interest over 2 years</p> <p>2M multiply twice by 1,075 1CA answer 1M subtracting 37 500 1CA interest over two years</p> <p style="text-align: right;">(5)</p>	L2
2.4.3	<p>USA (\$) $= \frac{10\,000}{14,38} \checkmark M$ $= \\$695,41 \checkmark A$</p>	<p>1M division</p> <p>1A VSA dollar</p> <p style="text-align: right;">(2)</p>	L2
		[27]	

QUESTION 3: MEASUREMENT [16]			
Ques.	Solution	Explanation	T&L
3.1	$\begin{array}{l} 2\,793 \quad \checkmark \text{ RT} \\ 3\,000 \quad \checkmark \text{ A} \end{array}$	1RT correct value 1A rounding AO (2)	L1
3.2	$\begin{array}{l} \text{TSA} = 2(21,5 \text{ cm} \times 10,25 \text{ cm} + 21,5 \text{ cm} \times 6,5 \text{ cm} + 6,5 \text{ cm} \times 10,25 \text{ cm}) \times 500 \\ \quad \quad \quad \checkmark \text{ C} \quad \quad \quad \checkmark \text{ SF} \\ = 853,5 \text{ cm}^2 \times 500 \\ = 426\,750 \text{ cm}^2 \quad \checkmark \text{ CA} \end{array}$	1C to 10,25 cm 1SF substitution 1CA answer (3)	L2
3.3	$\begin{array}{l} \text{Number of pallets} = \frac{2\,793}{500} \quad \checkmark \text{ MA} \\ \quad \quad \quad = 5,586 \quad \checkmark \text{ S} \\ \quad \quad \quad = 5 \quad \checkmark \text{ A} \end{array}$	1MA dividing by 500 1S simplification 1A complete number of pallets on the truck. (3)	L1
3.4	$\begin{array}{l} \frac{1\,637,5}{1\,000} \quad \checkmark \text{ C} \\ = 1,6375 \text{ tons} \quad \checkmark \text{ A} \end{array}$	1C conversion 1CA answer NPR (2)	L2
3.5	$\begin{array}{l} \text{Bricks used} = \frac{3\,300 - 75}{50} \quad \checkmark \text{ SF} \\ \\ \text{Area of the house} = \frac{3\,225}{50} \quad \checkmark \text{ S} \\ \quad \quad \quad = 64,5 \text{ m}^2 \quad \checkmark \text{ CA} \quad \checkmark \text{ unit} \end{array}$	1SF substitution 1S simplification 1CA area 1U correct unit (4)	L2
3.6	$\begin{array}{l} \text{Volume} = 21,5 \times 10,25 \times 6,5 \quad \checkmark \text{ SF} \\ = 1\,432,4375 \text{ cm}^3 \\ = 1\,432,44 \text{ cm}^3 \quad \checkmark \text{ S} \end{array}$	1SF substitution 1S simplification NPR (2)	L2
		[16]	

QUESTION 4: MAPS and PLANS [15]			
Ques.	Solution	Explanation	T&L
4.1	Strip chart ✓✓ RT	2RT answer (2)	L1
4.2	964 km ✓✓ RT	2RT answer (2)	L1
4.3	7 Regional roads ✓✓ RT	2RT correct number (2)	L1
4.4	N2 ✓✓ RT	2RT National road (2)	L1
4.5	<p>Total distance = 829 km – 460 km ✓ MA = 369 km ✓ A</p> <p style="text-align: center;">OR</p> <p>Total distance = 504 km – 135 km ✓ MA = 369 km ✓ A</p>	<p>1MA subtracting Correct values 1A answer (2)</p>	L2
4.6	$\text{Speed} = \frac{259 \text{ km}}{2,5} \checkmark \text{ RT}$ $= 103,6 \text{ km/h} \checkmark \text{ CA}$	<p>1RT kilometres 1SF substitution 1CA speed (3)</p>	L2
4.7	<p>Drive from Port Edward to Port St. Johns on the R61, turn right at junction and then left on N2. ✓ RT</p>	<p>1RT R61 and turn right 1RT turn left on N2 (2)</p>	L2
		[15]	

QUESTION 5: DATA HANDLING [22]			
Ques.	Solution	Explanation	T&L
5.1	183 237, 161 467, 139 391, 102 633, 71 188, 60 979, 50 226, 20 597, 18 898, 12 196 ✓✓ A	2A arrangement (2)	L1
5.2	Median = $\frac{71\,188 + 60\,979}{2}$ ✓ SF ✓ M = 66 083,5 ✓ A = 66 084	1SF substitution 1M median concept 1A answer NPR (3)	L2
5.3	% difference = 6,1% – 5,4% ✓ MA = 0,7 % ✓ SF	1MA subtracting correct values 1SF answer (2)	L1
5.4	$\frac{820\,812}{10}$ ✓ RT 82 081,2 ✓ M 82 081,2 ✓ CA	1RT 1M division by 10 1CA answer (3)	L2
5.5	Range = 171 375 – 10 315 ✓ MA = 161 060 ✓ CA	1MA subtracting correct values 1CA answer (2)	L2
5.6	$A = 100 - (20,3 + 14,6 + 18,0 + 7,1 + 5,4 + 1,2 + 3,3 + 2,5 + 20,5)$ $= 100 - 92,9\% \quad \checkmark S$ $= 7,1\% \quad \checkmark A$ <p style="text-align: center;">OR</p> $A = \frac{57\,735}{834\,453} \times 100\% \quad \checkmark M$ $= 6,9\% \quad \checkmark A$	1M subtracting from 100% 1S simplification 1A answer in% 1M for the correct fraction 1M for multiplication by 100% 1A answer in % NOTE: different answers due to decimals. (3)	L1

Ques.	Solution	Explanation	T&L
5.7	<div data-bbox="252 275 1286 1429"> <p>Number of animals surveyed in 2016</p> <p>NUMBER OF ANIMALS</p> <p>ANIMALS</p> </div> <p data-bbox="193 1464 675 1503">1 Mark for each bar plotted correctly.</p>	(4)	
5.8	$P_{(\text{animals})} = \frac{104\,183}{834\,453} \checkmark A$ $= 0,12 \checkmark CA$	1A numerator 1A denominator 1CA answer (3)	L2
		[22]	
		TOTAL:	100