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GRADE 11

NOVEMBER 2018

**MATHEMATICAL LITERACY P2
MARKING GUIDELINE**

MARKS: 100

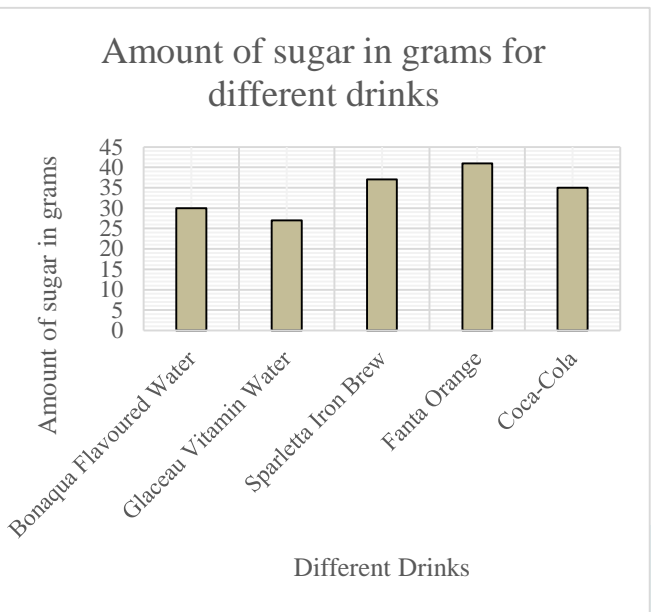
Symbol	Explanation
M	Method
MA	Method with accuracy
CA	Consistent accuracy
A	Accuracy
C	Conversion
S	Simplification
RT/RG/RM	Reading from a table/Reading from a graph/Reading from a map
F	Choosing the correct formula
SF	Substitution in a formula
J	Justification
P	Penalty, e.g. for no units, incorrect rounding off etc.
R	Rounding Off/Reason
AO	Answer only
NPR	No penalty for rounding

This marking guideline consists of 7 pages.

QUESTION 1 [31]			
Question	Solution	Explanation	Topic and Level
1.1.1	<p>Washing and drying = 18×16 = R288 ✓</p> <p>Staysoft = $5 = 3$ $18 = \frac{3}{1} \times \frac{18}{5}$ ✓ = R10,80 ✓</p> <p>Ironing = $5 = 20$ $18 = \frac{20}{1} \times \frac{18}{5}$ = R72 ✓</p> <p>Total = $288 + 10,80 + 72$ = R370,80 ✓</p>	<p>1 MA Amount for washing and drying</p> <p>1M Calculating Staysoft 1CA Cost for Staysoft</p> <p>1CA Cost for Ironing</p> <p>1CA Total (5)</p>	L3 F
1.1.2 (a)	<p>Helper amount No. of days = 9 ✓ Amount = 9×150 = R1 350 ✓</p> <p>Wash and dry = $15 \times 5 \times 16$ = R1 200 ✓</p> <p>Stay soft = $5 = 3$ $75 = \frac{3}{1} \times \frac{75}{5}$ = R45 ✓</p> <p>Handwash = $2 \times 5 \times 25$ = 250 ✓</p> <p>Total amount for laundry = $250 + 45 + 1200$ = R1 495 ✓</p> <p>Difference = $R1\ 495 - R1\ 350$ = R145 ✓</p> <p>Invalid laundry more expensive ✓</p>	<p>1A No. of days</p> <p>1CA Amount for helper</p> <p>1CA Amount for wash and dry</p> <p>1CA Staysoft</p> <p>1CA Hand wash</p> <p>1CA Total amount</p> <p>1CA Difference</p> <p>1O Invalid (8)</p>	L4 F
1.1.2 (b)	<p>Probability = $\frac{3}{31} \times 100$ ✓✓ = 9,7% ✓</p>	<p>1A Numerator 1A Denominator 1CA Answer as a % to 1 decimal place (3)</p>	L2 P

1.2.1	<p>Across the length $= \frac{3}{0,5} \checkmark$ $= 6$</p> <p>Across the breadth $= \frac{2,5}{0,5}$ $= 5 \checkmark$</p> <p>Number of containers fitting $= 6 \times 5$ $= 30 \checkmark$</p> <p>10 can fit \checkmark</p>	<p>1M Dividing 1C Conversion to metres</p> <p>1CA Breadth/Width</p> <p>1CA Number of containers 1O Opinion (5)</p>	L3 Maps
1.2.2 (a)	<p>Volume of container $V = \pi \times (\text{radius})^2 \times \text{height}$ $= 3,142 \times 25 \text{ cm} \times 25 \text{ cm} \times 70 \text{ cm} \checkmark$ $= 137\,462,5 \text{ cm}^3$ $= 137\,462,5 \text{ cm}^3 \checkmark$ No. of litres $= 137\,462,5 \div 1\,000$ $= 137,4625 \text{ litres} \checkmark$</p>	<p>1 Calculating radius</p> <p>1CA Volume</p> <p>1C Litres NPR (3)</p>	L3 M
1.2.2 (b)	<p>Capacity for 5 containers $= 137,4625 \text{ litres} \times 5$ $= 687,3125 \text{ litres} \checkmark$</p> <p>Water for 5 days of hand wash Washing $= 30 \times 5$ $= 150 \text{ kg} \checkmark$</p> <p>25 kg = 100 litres $150 = \frac{100}{1} \times \frac{150}{25} \checkmark$ $= 600 \text{ litres} \checkmark$</p> <p>Statement is valid \checkmark</p>	<p>CA from 1.2.2 (a) 1MA Litres for 5 containers</p> <p>1MA Amount of washing</p> <p>1M Number of litres</p> <p>1CA Total litres</p> <p>1 O Valid (5)</p>	L4 M
1.2.3	<p>Some material cannot be washed using machine. $\checkmark \checkmark$ OR Clothes can be damaged $\checkmark \checkmark$ Accept any other relevant reason.</p>	<p>2A Reason or explanation</p> <p>(2)</p>	L4 D
[31]			

QUESTION 2 [22]				
Question		Solution	Explanation	Topic and Level
2.1		<p>Amount for editing = $97 \times 100 \checkmark$ $= R\ 9\ 700 \checkmark$</p> <p>Typist = $\frac{\text{norm time}}{60} \times \text{rate} \times \text{no. of documents}$ $= \frac{28}{60} \times 195 \times 100 \checkmark \checkmark$ $= R9\ 100 \checkmark$</p> <p>% = $\frac{105}{100} \times 9\ 100 \checkmark$ OR $\frac{9\ 700}{9\ 100} \times 100$ $= R9\ 555 \checkmark$ $= 106,59\% - 100\%$ $= 6,59\%$</p> <p>Not valid, more than 5% \checkmark</p>	<p>1M Multiply correct values 1A Amount for editing</p> <p>1SF Substituting 1A Correct values 1CA Amount for typist</p> <p>1M Increasing by 5% 1CA Increased amount</p> <p>1O Invalid (8)</p>	L4 F
2.2	2.2.1	<p>31,7; 33,7; 35; 36,3; 36,4; 37; 39,2; 40,6; 41; 42,3; 44,1 Range = $44,1\ \text{g} - 31,7\ \text{g} \checkmark \checkmark$ $= 12,4\ \text{g} \checkmark$</p>	<p>1RT Reading the correct high and low values. 1M Subtraction 1CA Range (3)</p>	L2 D
	2.2.2	<p>Guest 1: Play energy drink = 29,2 g Powerade = 38,8 g \checkmark Total = 68 g \checkmark</p> <p>Guest 1: 5g = 1 teaspoon $\therefore 68 = \frac{1}{1} \times \frac{68}{5}$ $= 13,6\ \text{teaspoons} \checkmark$</p> <p>Guest 2: Appletiser = 31,7g Coca-Cola = 35g Total = 66,7 g \checkmark</p> <p>Guest 2: $\frac{66,7}{5}$ $= 13,34\ \text{teaspoons} \checkmark$</p> <p>Statement not valid. Energy drink contains more sugar. \checkmark</p>	<p>1RT Correct values for guests 1CA Total number for grams for guest 1</p> <p>1CA Teaspoons sugar guest 1</p> <p>1CA Total no of grams for guest</p> <p>1CA Teaspoons sugar guest 2</p> <p>1O Invalid (6)</p>	L4 M

	2.2.3	<p>Amount of sugar in grams for different drinks</p>  <p>Amount of sugar in grams</p> <p>Different Drinks</p>	5M One mark for each correct bar	L2 D
			(5)	
			[22]	

QUESTION 3 [20]

Question	Solution	Explanation	Topic and Level
3.1	3.1.1	<p>Distance from Durban to Nelspruit = 689 km ✓</p> <p>Speed = $\frac{D}{T}$</p> <p>$110 = \frac{689}{\text{time}}$ ✓</p> <p>$110 \times \text{time} = 689$</p> <p>Time = $\frac{689}{110}$ ✓</p> <p>= 6,26 hrs ✓</p> <p>= 6hrs 16 min ✓✓</p>	<p>L3 Maps and M</p> <p>1RT Distance</p> <p>1SF Substituting correct values</p> <p>1S Change subject of the formula</p> <p>1CA Answer in hours</p> <p>1C Converting 6,26 hrs to minutes</p> <p>1CA Hours and min (6)</p>
	3.1.2	<p>Ascending order</p> <p>58; 273; 292; 342; 475; 532; 656; 1050; 1120; 1463 ✓✓</p> <p>Median = $\frac{475+532}{2}$ ✓</p> <p>= 503,5 ✓</p>	<p>L2 Maps and D</p> <p>1RT Correct values</p> <p>1M Ascending order</p> <p>1M Concept of median</p> <p>1CA Median (4)</p>

	3.1.3	<p>Pretoria: $\frac{1120+273+342+292+532+58+1050+656+1463+475}{10}$ $= \frac{6261 \checkmark}{10 \checkmark}$ $= 626,1 \text{ km } \checkmark$</p> <p>Port Elizabeth: \checkmark $\frac{1120 + 1393 + 1373 + 1122 + 752 + 1062 + 300 + 927 + 756 + 635}{10}$ $\frac{9\,440}{10} = 944 \text{ km } \checkmark$ Difference = $944 - 626,1 \checkmark$ $= 317,9 \text{ km } \checkmark$</p>	<p>1M Adding all correct values</p> <p>1M Divide by 10 1CA Mean</p> <p>1RT Adding all correct values 1CA Mean</p> <p>1M Subtraction 1CA Difference (7)</p>	L2 and L3 Maps and D
	3.1.4	<p>Distance = $998 \text{ km } \checkmark$ Cost = $70 \times 998 \checkmark$ $= 69860 \text{ cents}$ $= 698,60$ $= \text{R}699 \checkmark$</p> <p style="text-align: center;">OR</p> <p>$998 \times 0,7 \checkmark$ $= 698,60 \checkmark$ $= \text{R}699 \checkmark$</p>	<p>1RT Correct distance 1M Multiplying by 70</p> <p>1R Nearest rand</p> <p>1RT Correct distance 1M Multiplying by 70 1R Nearest rand (3)</p>	L2 F and Maps
			[20]	
QUESTION 4 [27]				
Question		Solution	Explanation	Topic and Level
4.1		<p>Area of circle = $\pi \times \text{radius} \times \text{radius}$ $= 3,142 \times 0,45 \times 0,45 \checkmark \checkmark$ $= 0,636255 \text{ m}^2 \checkmark$</p> <p>Area of semicircle = $\frac{\pi \times \text{radius} \times \text{radius}}{2}$ $= \frac{3,142 \times 4,9 \times 4,9}{2}$ $= 37,71971 \text{ m}^2 \checkmark$</p> <p>Difference = $37,71971 - 0,636255$ $= 37,08 \text{ m}^2 \checkmark$</p>	<p>1A Radius 1SF Substitution 1CA Area of centre</p> <p>1CA Area of semi-circle</p> <p>1CA Difference NPR (5)</p>	L3 M
	4.2.1	169 seats $\checkmark \checkmark \checkmark$	3A No of seats (3)	L2 Maps
	4.2.2	$\frac{4 \checkmark}{15 \checkmark}$	1A Numerator 1A Denominator (2)	L2 P

	4.2.3	<p>Right side = 171 ✓ Total amount = 171×150 = R25 650 ✓</p> <p>Left side = 169×150 = 25 350 ✓ Middle = 255</p> <p>Cost of 1 seat in the middle = $\frac{108}{100} \times 150$ = R162 ✓</p> <p>Total amount = 255×162 = R41 310 ✓</p> <p>Total amount for all seats = 25 650 + 25 350 + 41 310 ✓ = R92 310 ✓ Statement invalid ✓</p>	<p>CA from 4.2.1 1A No of seats on right side 1 CA Amount for right seats 1CA Amount for left seats</p> <p>1A Amount for a middle seat 1CA Total amount for middle seats</p> <p>1M Adding all values 1CA Total amount 1O Invalid (8)</p>	L4 F
	4.3.1	<p>Grade 11 boys = $191 - (54 + 73)$ OR $137 - 73$ = $191 - 127$ ✓ = 64 = 64 ✓</p> <p>Total number of learners = $158 + 137 + 99$ = 394 ✓</p> <p>% = $\frac{64}{394} \times 100$ ✓ = 16,2% ✓</p>	<p>1M Subtracting 1CA No. of boys in Gr. 11 1CA Total number of learners 1M Multiply by 100 1CA Percentage NPR (5)</p>	L3 D
	4.3.2	<p>From Grade 10 to Grade 12 the number of learners is decreasing. ✓✓ Learners failed ✓✓ OR Learners dropped out ✓✓ OR Accept any other relevant reason</p>	<p>2O Trend 2O Reason (4)</p>	L4 D
			[27]	
			TOTAL:	100