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GRADE 12

SEPTEMBER 2022

MATHEMATICAL LITERACY P2 MARKING GUIDELINE

MARKS: 150

Symbol	Explanation
М	Method
MA	Method with accuracy
CA	Consistent accuracy
RCA	Rounding consistent accuracy
А	Accuracy
С	Conversion
S	Simplification
SF	Correct substitution in a formula
J	Justification
0	Opinion/Example/Definition/Explanation/Justification/Verification
RT/RG/RM	Reading from a table/graph/map
Р	Penalty, e.g. for no units, incorrect rounding off etc.
R	Rounding off
NPR	No penalty rounding or omitting units
AO	Answer only, full marks

This marking guideline consists of 12 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 aflees van 'n grafiek, tabel, uitlegplan en kaart en ekstra antwoorde gee, penaliseer vir elke ekstra item.

KEY TO F = Fina	KEY TO TOPIC SYMBOL: F = Finance: M = Measurement: MP = Maps, plans and other representations: P= Probability			
	, , , , , , , , , , , , , , , , , , ,		v	
QUEST	[ON 1 [30 MARKS]			
Quest	Solution	Employed	Loval	
	Solution	Explanation	Level	
1.1.1	1,50 kg to g 1.56 × 1.000 \checkmark M	1 A correct answer	IVI I 1	
	$= 1.560 \text{ g } \checkmark \text{A}$			
		(2)		
1.1.2	125 g : 625 g ✓MA	1M divide by 125	М	
	1:5 🗸	1MA answer	L1	
1 1 2		(2)	М	
1.1.5	Convert 8 kg to g $8 \times 1000 - 8000 \text{ g}$ \checkmark C	IC convert 8 kg to g	IVI I 1	
	8 × 1 000 = 8 000 g		LI	
	6,25 cups: 5 000 g			
		1M using ratio format		
	No. of cups $= \frac{8000 \times 6.25}{4}$ \checkmark M			
	10. of cups = 5 000			
	50 000			
	$=\frac{1}{5000}$	1MA correct answer		
		(3)		
	$= 10 \checkmark MA$			
1.1.4	Mass of raisins = $\frac{450 \text{ g} \times 125 \text{ g}}{5000} \checkmark \checkmark \text{MA}$	2MA 450 multiply correct	M	
	5 000 g	value and divide by 5 000	LI	
	= 11,25 g ✓ A	1A answer (3)		
1.2.1	Diameter is a line through the centre of the circle	2A correct explanation	M	
	that touches the circumference of the circle at $\frac{1}{2}$		LI	
	two points. \checkmark \checkmark A	(2)		
1.2.2	Difference = $8.04 - 0.9025 \checkmark \text{RT} \checkmark \text{MA}$	1RT correct values	М	
	$= 7,1375 \times 100 \checkmark C$	1MA subtract correct values	L1	
	$= 713,75 \text{ mm}^2 \checkmark \text{A}$	1C convert to mm		
		1A correct answer		
	OR	2C some to make		
	$0.9025 \times 100 = 90.25 \text{ mm}^2 \checkmark C$			
	$8.04 \times 100 = 804 \text{ mm}^2 \checkmark \text{C}$			
		1M subtract correct values		
	Difference = $804 - 90,25 \checkmark M$	1A correct answer		
	$= 713.75 \text{ mm}^2 \checkmark \text{A}$	(4)		

1.2.3	$\frac{0}{6} - \frac{0.9025}{2} \times 100 \sqrt{M}$	1M multiply by 100	М
	$70 = \frac{1}{8,04} \times 100 + 101$		L1
	$= 11,225 \% \checkmark A$	1A correct percentage	
		NPR (2)	
1.2.4	Mass in kg = $28,25 \div 1\ 000 \checkmark$ MA	1MA dividing by 1 000	М
		1A answer	L1
	$= 0.02825 \text{ kg} \checkmark \text{A}$		
		(2)	
1.2.5	Radius = $32 \div 2 \checkmark MA$	1MA dividing by 2	М
	$= 16 \text{ mm} \checkmark \text{A}$	1A correct radius	L1
		(2)	
1.2.6	Weight = $15 \times 28,25 \checkmark MA$	1MA multiplying by 15	М
			L1
	= 423,75 g ✓ A	1A mass in g	
		(2)	
1.2.7	Time: $11:15 + 4:50 = 15:65 \checkmark M$	1M adding time	М
			L1
	$\checkmark C \checkmark A$	1C convert minutes to hrs	
	= 16h05 minutes		
		1A correct time	
		(3)	
1.3.1	Dimensions on drawing are portrayed smaller than in	2A correct explanation	MP
	real life. ✓ ✓ A		L1
	OR		
	Dimensions on drawing are portrayed bigger in real	(2)	
	life. $\checkmark \checkmark A$		
1.3.2	Perimeter $=$ sum of all sides		M
			L1
	Length C = $8,9 \text{ m} - (2,7 + 1,70 + 1)$		
	$= 8,9 \text{ m} - 5,4 \text{ m} \checkmark \text{M}$	IN add sides and subtract	
		1 A compation creation	
	$=$ 3,5 m \checkmark A	1A correct answer	
		(2)	
		[[31]	

QUESTION 2 [31 MARKS]			
Quest.	Solution	Explanation	Level
2.1.1	A3. ✓✓ RT	2RT correct answer (2)	MP L1
2.1.2	R572 ✓ ✓ RT	RT correct answer	MP L2
		(2)	
2.1.3	N1 ✓✓ RT	2RT correct answer	MP L1
		(2)	
2.1.4	NW or North West $\checkmark \checkmark$ RT	2RT correct direction	MP L2
		(2)	
2.1.5	 Drive from Pretoria and take the N1 North to Polokwane in Polokwane CBD take the R521 to Dendron, approximately 60 km to Vivo, approximately 40 km to join Alldays and drive approximately 46 km and another 23 km to Mapungubwe National Park entrance and reception. ✓✓✓ RT 	3RT for using R521, N1 with explanation.	MP L2
	AND		
	 Take the N1 from Pretoria to Polokwane for approximately 260 km to Makhado for approximately 107 km join with Musina for approximately 92 km and turn left, take the R572 for another 68 km to Mapungubwe National Park entrance and reception. ✓✓ ✓ RT 	3RT for using N1, R572 with explanation (6)	
2.2.1	Actual distance Beitbridge – Musina:	1M conversion ratio	MP
	$= \frac{1.3 \times 3\ 000\ 000}{100\ 000} \checkmark \checkmark M$	100 000	L2
	$= 39 \text{ km} \checkmark \text{A}$	1A correct answer (3)	
2.2.2	Pretoria to Mapungubwe: Distance = $260 + 60 + 40 + 50 + 22 + 23 \neq 23 \checkmark M$ = $478 \text{ km} \checkmark A$	1M for adding correct values 1A correct answer (2)	MP L2

5

2.2.3	D = Average Speed x Time		MP L3
	$478 = 120 \text{ x T} \checkmark \text{SF}$	1SE substitute	20
	$T = \frac{478}{122}$	correct values	
	$= 3,9833333333 \checkmark A$	1A correct answer	
	$= 0,9833 \times 60 \checkmark C$	1C convert time	
	= 58.998 min OR 3-59'00''		
	$\approx 59 \min + 3hrs + 45 \min + 15 \min \checkmark M$	1M adding time	
	$\approx 4 \text{ hr 59 min } \checkmark \text{ S}$	1S simplification	
	Departure time: 4 hr 20 min + 4 hr 50 min		
	Departure time. 4 in 50 min + 4 in 59 min		
	Arrival time: $= 08h89 \min \checkmark S$	1S simplified time	
	≈ 09h29 min ✓ CA	1CA arrival time	
	Yes, they will make it in time. \checkmark J	1J conclusion (8)	
2.2.4	Distance from Pretoria to Mapungubwe National Park:	CA from 2.2.2	MP
(a)	$= 478 \text{ km} \checkmark \text{CA}$	1CA correct distance	L2
	✓M ✓M	1M multiplying by	
	Total litres = $\frac{478 \text{ km}}{100000000000000000000000000000000000$	0,79 1M dividing by 10	
	10 km	1A correct answer	
2.2.4		(4)	NO
2.2.4 (b)	Cost of petrol: 1 litre = R23,90	CA from $Q_{2,2,4}(a)$	MP L1
	$Cost = R23,90 \times 37,76 \checkmark M$	1M multiply correct	
	= R902,46 ✓ CA	values.	
		1CA correct answer (2)	
		[33]	

QUEST	TION 3 [31 MARKS]		
Quest	Solution	Explanation	Level
3.1.1	Circumference = $2 \times 3,142 \times radius$	1SF for radius value 14	M L2
	✓ SF	1C correct values	12
	$= 2 \times 3,142 \times 14 \checkmark C$	1MA correct answer	
	= 87,976 cm ✓ MA	(3)	
3.1.2	Volume = $3,142 \times r^2 \times h$	1M finding radius of	M L 2
	$3\ 079,16\ \mathrm{cm}^3 = 3,142 \times 14 \times 14 \times \mathrm{height} \checkmark \mathrm{M} \checkmark \mathrm{C}$	1C convert 140 mm to	LJ
	Height (H) = $3\ 079,16\ \text{cm}^3 \div 615,832\ \text{cm}^2 \checkmark \text{MA}$	cm	
	$= 5 \text{ cm} \checkmark \text{CA}$	1SF for radius value 14	
		1MA divide by area of cylinder baking pan	
		1CA correct answer	
		(5)	
3.1.3	°C = (°F - 32) ÷ 1,8 = $(430 - 32) \div 1,8 \checkmark$ SF = 398 ÷ 1,8 ✓S = 221,11 °C ✓ A	1SF correct substitution 1S simplification 1A correct answer (3)	M L2
3.2.1	1 g of sugar = 4 calories	1MA finding value A	M L 2
	$A = \frac{57,3 \times 4}{1} \qquad \checkmark MA$	1A correct answer	L2
	= 229,2 calories \checkmark A	1MA finding value B	
	$\mathbf{B} = \frac{169,2 \times 1}{4} \checkmark \mathbf{MA}$	C	
	= 42,3 grams ✓A	1A correct answer	
		(4)	
3.2.2	Total amount in sugar = 57,3 g \times 3 \checkmark MA	1MA multiply 57,3 by 3	M L1
	= 171,9 grams ✓MA	1MA correct answer (2)	

3.2.3	Daily consumption sugar intake:	CA from 3.2.2	M
	Vitamin water = 5.5×2 = 11 g \checkmark MA	1MA correct value 1M finding weekly intake	L4
	Per week = $11 \times 7 \checkmark M$		
	= 77 + 20 g		
	= 97 g ✓ CA	1CA correct answer	
	% Sugar intake = $\frac{97 \text{ g}}{171.9 \text{ g}} \times 100 = 56,4\% \checkmark \text{M} \checkmark \text{C}$	1M finding percentage 1CA correct answer	
		1J justification	
	Her statement is valid. \checkmark J	(6)	
3.2.4	$2 \times 35 \text{ g} = 70 \text{ g} \checkmark \text{MA}$	1MA divide by 4 g	M L2
	1 year = $70 \times 365 \checkmark M$ (70×366) ÷ 1 000	1M multiply by 365 or 366	
	$= 25550 \text{ g} \div 1000 \checkmark \text{C}$	1C convert gram to kg	
	= 25,55 kg OR 25,62 kg ✓CA	(4)	
3.2.5	She must look for 'unsweetened products'. $\checkmark \checkmark R$	2R reason 1	M L 4
	Consume more healthy fats. $\checkmark \checkmark R$	2R reason 2	
	OR		
	She should change her daily drinks to a bottle of vitamin water. $\checkmark \checkmark R$		
		(4)	
		[31]	

QUEST	TION 4 [34 MARKS]		
Quest	Solution	Explanation	Level
4.1.1	There is no wall separating the kitchen and living	2A correct explanation	MP
	room ✓ ✓		L1
		(2)	
4.1.2	2 and 3 $\checkmark \checkmark$ A	2A correct explanation	MP
		(2)	L1
4.1.3	South $\checkmark \checkmark$ RT	2RT correct answer	MP
		(2)	L2
4.1.4	$11 \checkmark \checkmark RT$	2RT correct answer	MP
101		(2)	Ll
4.2.1	Total length in feet $= 14 + 12$		MP
	- 26 feat		LS
	– 20 Teet	1 A total longth in fast	
	Total length in inches -5 ± 2	and inches	
	$10 \tan 10 \tan 10 \tan 10 \tan 10 = 5 + 2$	and menes	
	= 7	1M converting feet	
	Feet to cm = $26 \times 30,48$ \checkmark	1 CA length in metres	
	= 792,48	1 MA length from	
	T	inches to metres	
	To m $= 792,48 \div 100$	1 1 1 1 1	
	- 7.0248 ./	TM adding values	
	- 7,9248 •	$1 C \Lambda$ answer	
	Inches to m $= 7 \times 0,0254$		
	= 0,1778 🗸		
	Total length = $7,9248 + 0,1778 \checkmark$		
	= 8,1 m 🗸	(6)	

4.2.2	Bedroom 2 length	$n = 14 \times 30,48$	1 A length in metres	M L 4
		$= 426,72 \div 100$	1 A lengur in meues	L4
		= 4,2672 🗸	1 CA total length	
	Inches	= 5 x 0,0254		
		= 0,127	1 CA total width	
	Total	= 4,3942m ✓	1 M calculating area	
	Width	= 10 x 30,48	1 CA area	
		= 304,8 ÷100	1M dividing by 6	
		= 3,048 m		
	Inches	= 9 x0,0254		
		= 0,2286		
	Total	=3,048+0,2286		
		= 3,2766 ✓		
	Area	= length x width		
		= 4,3942 x 3,2766 ✓		
		$= 14,398 \text{ m}^2 \checkmark$		
	Litres paint	= 14,398 ÷6 ✓		
		= 2,399 litres ✓	ICA no of intres	
	Statement valid ✓	/	10 Statement valid (8)	

4.3.1	Length of one side = $\sqrt{2025}$ cm ² \checkmark M		М
		1M finding one side	L3
	$S = 45 \text{ cm} \checkmark A$	1A correct answer	
	Perimeter = Side $\times 4$	1SF substitute correct	
	$= 45 \text{ cm} \times 4 \checkmark \text{SF}$	1MA for 180 cm	
	$= 180 \text{ cm} \checkmark \text{MA}$	IMA IOI 100 CIII	
	Conversion = $180 \text{ cm} \div 100$ = $1.8 \text{ m} \checkmark \text{C}$	1C convert to cm	
	Her statement is valid \checkmark O		
		10 justification	
		(6)	
4.3.2	Length of fabric $= 270$ cm	CA cushion length	М
		from 4.3.1	L3
	Number of cushions = $270 \div 45 \text{ cm} \checkmark \text{MCA}$ = $6 \checkmark \text{CA}$	1MCA dividing fabric by 45 cm	
	Width of fabric -180 cm	1CA correct value	
	Number of cushions $= 180 \div 45$ cm	1CA correct value	
	$= 4 \checkmark CA$	1S simplify	
	Cushions faces = $6 \times 4 \checkmark S$	1CA total number of cushions	
	= 24 ✓		
	Total cushions faces = $24 \div 2$		
	= 12 ✓CA		
		(6)	
		[34]	

QUESTI	ON 5 [21 MARKS]		
Quest	Solution	Explanation	Level
5.1.1	Width of $car = 1\ 860 \div 1\ 000$ \checkmark C	1C mm to m	M L4
	= 1,86 m	1 M subtraction	L
	Remaining space = $3,5 - 1,86 \checkmark M$	1 M dividing by 2	
	= 1,64	1 CA answer	
	Space on both sides = $1,64 \div 2 \checkmark M$	1 O statement valid	
	= 0,82m ✓CA	I O statement vanu	
	Statement is valid ✓O	(5)	
5.1.2	$P(\text{Grey SUV}) = \frac{5}{20} \checkmark \checkmark M$	2M for correct numerator and denominator	P L2
	$= 0,25 \checkmark A$	1A correct answer	
		(3)	
5.1.3	\checkmark A \checkmark M		Р
	Probability (non-metallic) = $(11 \div 20) \times 100\%$	1A correct fraction	L4
		1M percentage	
	$=55\%$ VCA \checkmark A	1CA answer	
	$\therefore \text{ It is less than 56\%. } \checkmark \text{ O}$	10 conclusion	
	OK The OK valid.	(4)	
5.2.1	Length of Model	1M divide by 8	MP
	$= 482.5 \text{ cm} \div 8 \checkmark \text{M}$	1A correct answers	L4
	$= 60,3125 \text{ cm } \checkmark \text{A}$		
	Width of Model	1M divide by 8	
	$= 186 \text{ cm} \div 8 \checkmark \text{M}$	1A correct answer	
	$= 23,25 \text{ cm} \checkmark \text{A}$		
	Area of Model -60.2125×22.25	1M finding area	
	Area of Model = $60,3123 \times 23,23$ = 1.402.265625 cm ² \checkmark CA	ICA confect answer	
	- 1 102,203023 Chi + Chi	1M finding table	
	35% of table area = $\frac{35}{100} \times 3716,1216 \text{ cm}^2 \checkmark \text{M}$	area	
	$= 1 300,64256 \text{ cm}^2 \checkmark \text{CA}$	1CA correct answer	
	The scale of 1 : 8 will not be suitable \checkmark O	10 reason (9)	
		[31]	
		[21]	
		TOTAL: 150	