Province of the
EASTERN CAPE
EDUCATION

O.R TAMBO
INLAND DISTRICT

GRADE 11

MATHEMATICAL LITERACY PAPER 2

JUNE 2022

MARKS: 75

TIME: 1 ½ HOURS

This question paper consists of 7 pages.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of THREE questions. Answer ALL questions.
2. Number the answers correctly according to the numbering system used in this question paper.
3. You may use an approved calculator (non-programmable and nongraphical), unless stated otherwise
4. Show ALL the calculations clearly.
5. Round off ALL final answers appropriately according to the context, unless stated otherwise
6. Indicate units of measurement, where applicable
7. Diagrams are NOT necessarily drawn to scale
8. Write neatly and legibly.

QUESTION 1

1.1 Mr. Mojos earns a living by removing the drums of garden refuse in the township where he lives. He dumps the garden refuse in big waste bin outside the township.

The drum is cylindrical and has a diameter of 60 cm and a height of 1,2 m.

The waste bin is a rectangular prism, has a length of 12,5 m, breath(width) of 5 m and its height is 2,4 m.

You may use the formulae: **Area (open) = $2\pi r \times h$**

Area (closed) = $2\pi r^2 + 2\pi r \times h$

Volume = $\pi \times r^2 \times h$

Volume = $l \times b \times h$

Number of drums = $\frac{Volume\ of\ the\ waste\ bin}{volume\ of\ the\ drum}$

Use the information above to answer the questions that follow.

1.1.1 Define the term 'volume'. (2)

1.1.2 Calculate the volume of the drum (in m³) to one decimal place. (4)

1.1.3 Calculate the volume of the waste bin (in m³). (3)

1.1.4 Determine the number of drums that can be emptied into the bin to fill it up. (3)

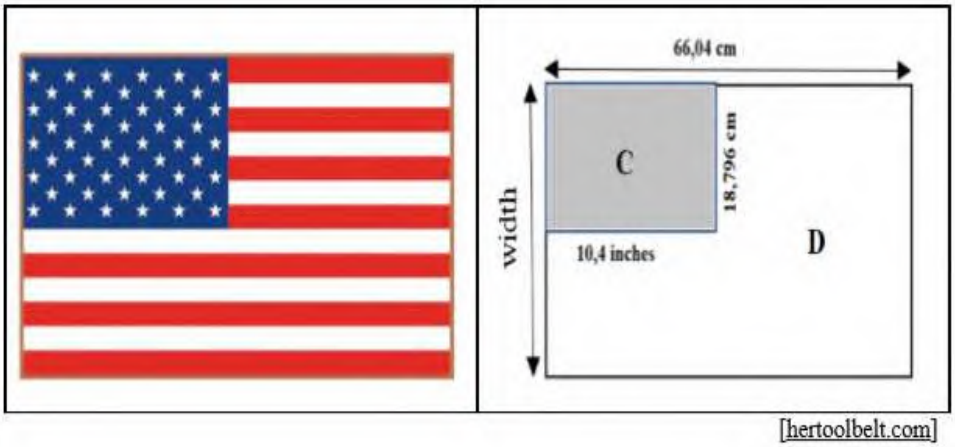
1.1.5 Mr. Mojos wants to paint the outside of the drums, excluding the bottom of the drum. (Remember that the drum is open at the top).

Calculate the area around the drum in m^2. (3)

1.1.6 According to the information on the tin of paint, he can paint (coat) **1,5** m^2 with **1 litre** of metal paint.

Calculate the number of litres of paint he will require to paint 80 drums with two (2) coats of paint. (5)

1.2 Lwando bought an American flag mounted on a rectangular wooden frame shown in diagrams below.



Study the diagrams above and answer the questions below.

1.2.1 Define the term 'perimeter'. (2)

1.2.2 Write down the length of section C of the flag. (2)

1.2.3 Calculate the area (in cm^2) of section C of the flag. Give your answer to one decimal place. (5)

You may use 1 inch = 2,54 cm

1.2.4 Calculate the width of the front view of the wooden frame if the perimeter of the frame is 201,93 cm. (3)

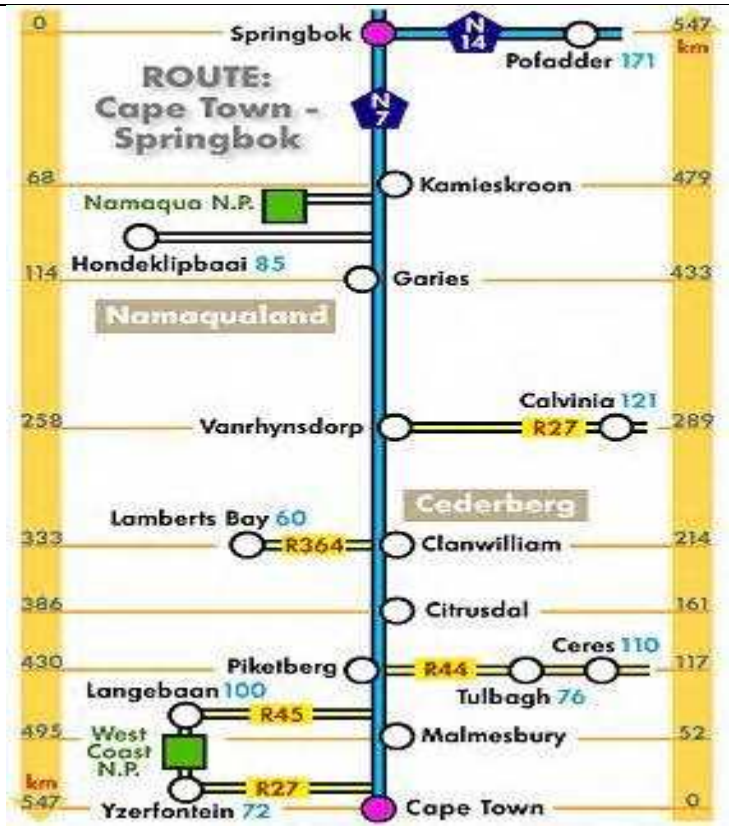
You may use the following formula:

$$\frac{\text{Perimeter}}{2} = \text{Length} + \text{Width}$$

[32]

QUESTION 2

The strip chart in the ANNEXURE below shows the distance between Cape Town and Springbok. Answer the questions below based on the map.



2.1 What is the distance between Cape Town and Springbok in metres? (2)

2.2 Which national roads are shown on this map? (4)

2.3 How many regional roads are on this map? (2)

2.4 Give directions from Vanrhynsdorp to Ceres by mentioning the national roads and regional roads (3)

2.5 What is the probability in two decimal places of choosing an even-numbered road from the regional roads (3)

2.6 Sipho travelled from Malmesbury to Springbok. Prove if he was within the accepted speed limit if it took him 4 hours and 30 minutes to reach his destination.

You may use the following formula: **Speed** $= \frac{Distance}{Time}$

(5)

NOTE: Accepted speed limit is 120 km/hr. **[19]**

QUESTION 3

3.1



Use the map above to answer the questions that follow.

3.1.1 Mention the type of scale shown on this map. (2)

3.1.2 Name any two towns on the N12 route. (2)

3.1.3 Determine the general direction of Springbok from Rustenburg. (2)

3.1.4 A family wants to travel from Polokwane to Durban. Describe any route they can follow to travel to Durban. (3)

3.1.5 Determine the actual distance (in km) between Cape Town and Pretoria. Use the scale of 1:16 000 000. (4)

3.1.6 Mr Matome decided to travel from Cape Town to Bloomfontein at distance of 986km. The car he was driving has a consumption rate of 30km per 2,5litres. Determine how many litres of fuel he will need for this journey. (3)

3.1.7 Calculate the total fuel cost in rands for the journey if fuel cost is 1 650cents per litre. (3)

3.2 A bag contains 24 similar balls. 8 of the balls are red, 3 are white, 3 are blue and the rest are green. A ball is selected randomly from this bag, what is the probability that

3.2.1 the ball is a green ball. (3)

3.2.2 the ball is a black ball. (2)

[24]

TOTAL = 75 MARKS

Province of the
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GRADE 11

MATHEMATICAL LITERACY MEMORANDUM

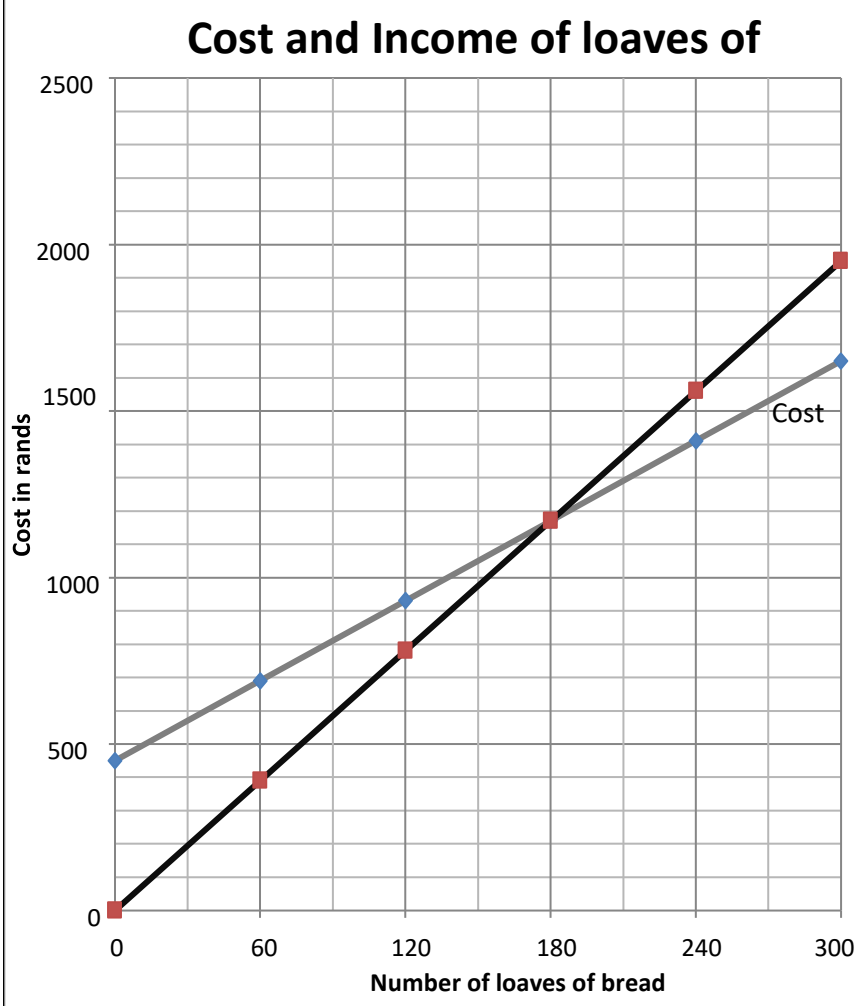
MARKS: 75

Symbol	Explanation
M	Method
CA	Continuous accuracy
A	Accuracy
C	Conversion
S	Simplification
RT/RG/RM	Read from Table / Read from graph/ Read from Map
SF	Substitution in formula
O	Opinion/Example / Deduction/conclusion
P	Penalise for example no units / incorrect rounding etc
R	Rounding
J	Justification/ Motivation/ Supply a Reason

This marking guideline consists of 5 pages

QUESTION 1 [15]			
OUES	**SOLUTIONS**	**EXPLANATIONS**	**L1-4**
1.1.1	Rent ✓ Cell phone contract✓	 2 A	1
1.1.2	R 250 ,00 × 4 = R 1 000, 00✓ R 1 000, 00 + R 600, 00✓ R 1 600,00✓	1M 1M 1A	2
1.1.3	B = R150, 00 + R 500,00 + R 300,00+ R 120,00 ✓ = R1 070,00✓	1M 1A	2
1.1.4	$\frac{1\ 070,00}{1\ 600,00} \times 100$✓ = 66,875%✓ = 67%✓	1M 1A 1R	3
1.2.1	4:30 – 9:00✓ = 5hours 30minutes✓	1M 1A	2
1.2.2	5hours× 60minutes = 300minutes✓ 300 minutes + 30minutes✓ = 330 minutes✓	1M 1M 1A	3

QUESTION 2		[19]	
2.1	Cost = R450 +(R4×number of loaves) ✓ ✓	2Correct formula (2)	2
2.2	Value for A= R450 + (R4 ×300) ✓ = R1 650,00✓ Value for B= R6.50 × R180✓ =R1 170,00✓	1 Substitution 1 Answer 1 Substitution 1 Answer (4)	2
2.3	Cost of 50 loaves = R450 + (R4 × 50) ✓ = R650,00✓	1 Substitution 1 Answer (2)	2

2.4		1 heading 1 A (0;450) 1 A (0;0) (starting points) 1 breakeven point 1 labelling both axes 1 labelling both graphs 1A joining the points (7)	2
2.5	Coordinates (180✓; R1 170) ✓ It means that both cost and income for baking and selling 180 loaves is the same amount which is R1 170. ✓ ✓	2 coordinates 2 Meaning (4)	2

QUESTION 3			**[21]**	
3.1.1	Two items ✓✓		2A	1
3.1.2	R 499, 00 $\times \frac{33}{100}$✓ R 164, 00✓	Or Discount = $33\% \ of \ R499 = R164$	1M 1M	2
3.1.3	Total including VAT R 768,00 $\times \frac{15}{100}$ ✓ = R 115, 20 + R 768,00✓ = R 883,20 ✓		1Mmultiplication 1M addition 1A answer	2

3.2.1	Cost of water used 6kl = R0, 00 24kl × 6,48✓ = R155, 52✓ 5kl × 16,20 = R81,00✓ R155, 52 +R81,00✓ =R236,52 ✓ R236,52 + R80,70✓ = R317,22 ✓	Cost of water used 6kl = R0, 00 23kl × 6,48✓ = R149,04✓ 5kl × 16,20 = R81,00✓ R149,04+R81,00✓ =R230,04 ✓ R230,04 + R80,70✓ = R310,74 ✓	1Multiplication 1A answer 1A answer 1M addition 1 A answer 1M adding R80,70 1A answer	2
Or	Cost of water used 6kl = R0, 00 24kl × 6,48✓ = R155, 52✓ 5kl × 16,20 = R81,00✓ R155, 52 +R81,70✓ =R236,52 ✓ R236,52 + R80,70+R7,15✓ = R324,37✓	Cost of water used 6kl = R0, 00 23kl × 6,48✓ = R149,04✓ 5kl × 16,20 = R81,00✓ R149,04 +R81,00✓ =R230,04 ✓ R230,04 + R80,70+R7,15✓ = R317,89✓	1Multiplication 1A answer 1A answer 1M addition 1 A answer 1M adding R80,70 & R7,15 1A answer	
3.2.2	New price = R80,70× $\frac{15}{100}$ = R 12,01✓ = R80,82 + R12,01✓ = R 92,81✓		1Mmultiplication 1Maddition 1Aanswer	2
3.3	$1st\ year = (\frac{7,5}{100} \times \text{R}120\ 000,00) +$ R 120 00,00 ✓		1Multiplication	
	= R129 000, 00✓ $2nd\ year = \frac{7,5}{100} \times R120\ 000 + R129\ 000$ $= R138\ 000$✓ $3rd\ year = \frac{7,5}{100} \times R120\ 000 + R138\ 000$ $= R147\ 000$✓		1Aanswer 1Aanswer 1Aanswer	3
Or	Simple interest = 7,5% × R120 000 × 3 = 27 000 Total = R120 000 + 27 000 = R147 000.		1Multiplication 3Aanswer	
QUESTION 4				**[20]**
4.1.1	32,49; 29,63; 23,62; 17,89; 14,59; 12,03; 10,31; 9,89; 9,57✓✓		2M arranging in descending order	2
4.1.2	Median=R14,59✓✓		2M	2
4.1.3	Range = R 33,73 – R9,68✓ = R24,05 ✓		1 Subtraction 1 Answer	2
4.1.4	-R3,32 ✓✓		2M	2
4.1.5	Margarine 500g✓✓		2M	2
4.1.6	No Mode ✓✓		2M	2
4.2.1	15✓✓		2 M	2
4.2.2	4✓✓		2 M	2
4.2.3	10✓✓		2 M	2

4.2.4	¾ OR 0,75 OR 75%✓✓	1A numerator) 1A denominator)	2

TAXONOMY LEVELS					
GRADE 11					
MATHEMATICAL LITERACY					
PAPER 1 : TERM 2 – 2022					
MARKS: 75					
QUESTION	**KNOWLEDGE**	**ROUTINE PROCEDURES**	**COMPLEX PROCEDURES**	**PROBLEM SOLVING**	**TOTAL**
DESIRED %	**30%**	**30%**	**20%**	**20%**	**100%**
1.1.1	2				2
1.1.2		3			3
1.1.3		2			2
1.1.4			3		3
1.2.1		2			2
1.2.2			3		3
2.1.1		2			2
2.1.2		4			4
2.1.3		2			2
2.1.4			7		7
2.1.5		4			4
3.1.1	2				2
3.1.2	2				2
3.1.3		3			3
3.2.1			3	4	7
3.2.2				3	3
3.3				4	4
4.1.1	2				2
4.1.2	2				2
4.1.3	2				2
4.1.4	2				2
4.1.5	2				2
4.1.6	2				2
4.2.1	2				2
4.2.2	2				2
4.2.3	2				2
4.2.4				2	2
Total	**24**	**22**	**16**	**13**	**75**
Actual %	**32%**	**29%**	**18%**	**18%**	**100,0**
Desired %	**30%**	**30%**	**20%**	**20%**	**100**