Province of the
EASTERN CAPE
EDUCATION

NATIONAL
SENIOR CERTIFICATE

MATHEMATICAL LITERACY

GRADE 10

CONTROLLED TEST

14 /MARCH /2023

MARKS: 50
TIME: 1 HOUR

INSTRUCTIONS AND INFORMATION

1. This question paper consists of THREE questions. Answer ALL the questions.

2. Number the answers correctly according to the numbering system used in this question paper.

3. Start EACH question on a NEW page.

4. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.

5. Show ALL calculations clearly.

6. Round off ALL final answers appropriately according to the given context, unless stated otherwise.

7. Indicate units of measurement, where applicable.

8. Diagrams are NOT necessarily drawn to scale, unless stated otherwise.

9. Write neatly and legibly.

Mathematical Literacy 3 Term 1 - 2023

QUESTION 1 [10 MARKS]

Me Seipati received her pension amount of R1 450 350 to be divided amongst her husband Jacob, and her two daughters Tshiamo and Lerato in the ratio of 3:2:2.
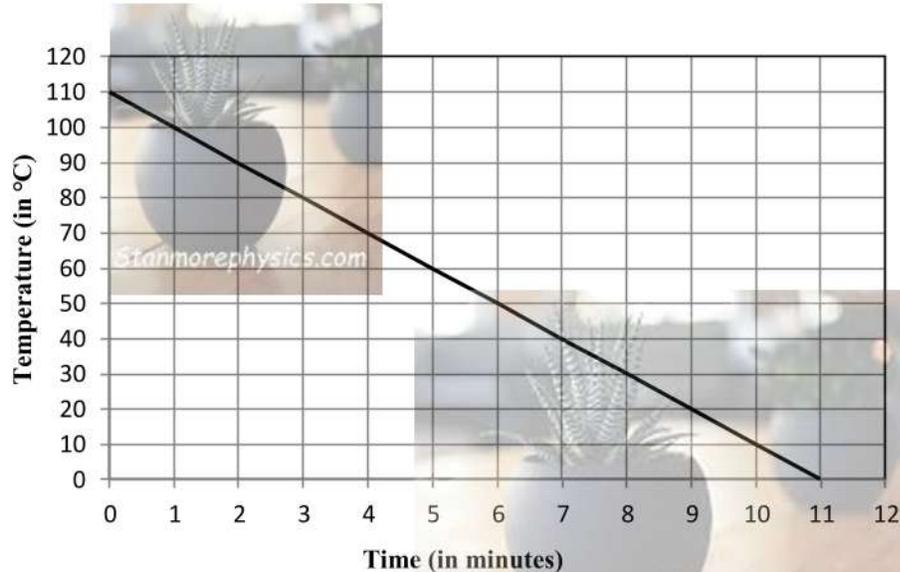
Use the information above to answer the questions that follow.

1.1 Write down R1 450 350 in words. (2)

1.2 Round the pension amount to the nearest hundred. (2)

1.3 Determine how much Jacob and the two daughters will each receive (4) when the ratio given is used.

1.4 Lerato invests 10% of the money she received. Determine the amount of money that Lerato invested. (2)

[10]

Please turn over

QUESTION 2 [18 MARKS]

2.1 Mr Mofana owns a bakery and every time before he leaves the bakery, he ensures that all the ovens are switched off for safety purposes and to save electricity. The graph below shows the time it takes for the temperature of the stoves to decrease after being switched off.

Use the information and the graph above to answer the questions that follow.

2.1.1   Write down the temperature after 4 minutes.   (2)

2.1.2   Identify the dependent and independent variables from the graph above.   (4)

2.1.3   Explain the difference between the relationship in this graph and an inverse relationship.   (4)

2.1.4   Write down how much time does it take for the stove's temperature to be 0 °C.   (2)

Please turn over

2.2   Mr Mofana supplies local shops with bread. **Table 1** shows the cost of bread which are sold with the minimum of 20 loaves of bread.

Table 1:

No. of loaves (L)	20	40	60	**B**	100
Cost of bread loaves in Rands (C)	200	400	**A**	800	1000

Use the information above to answer the following questions.

2.2.1   Determine the value of A and B in TABLE 1.   (4)

2.2.2   Below is the formula to calculate the Cost of bread loaves (C). Determine the missing amount value.

Cost of bread = R……. × no. of loaves (L)   (2)

[18]

Mathematical Literacy   Term 1 - 2023

QUESTION 3 [22 MARKS]

Mr Mphatsoe wants to make a dessert with the ingredients shown below.

Ingredients:

- 1 packet tennis biscuits
- 1 tin condensed milk
- 1 cup powdered milk
- 1½ cup lemon juice
- ½ cup water

Note: 1 cup = 250 ml

Recipe serves 5 people

3.1   Identify an ingredient with the least number of cups.   (2)

3.2   Mr Mphatsoe decided to improve the taste of the dessert by increasing the lemon juice by 2%. He claimed that the amount of juice after the increase is 1 913, 5 ml. Verify, showing ALL calculations, whether the Mr Mphatsoe's statement is valid.   (6)

3.3   How many cups of water is needed to make the dessert for 30 people?   (4)

3.4   One tin of condensed milk costs R25,99 (VAT inclusive). How much will the condensed milk cost to make the dessert for 15 people?

                                                                               (3)

3.5   If VAT of 15% is payable on a tin of condensed milk, determine the price of 1 tin of condensed milk without VAT.   (3)

3.6   The price of a tin of condensed milk increased from an amount of R21,99. Determine the percentage increase in the price of 1 tin of condensed milk.

        You may use the following formula: $\dfrac{\text{new price} - \text{old price}}{\text{old price}} \times 100\%$.

                                                                               (4)
                                                                              [22]

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MATHEMATICAL LITERACYMARKING

GUIDELINE

MARCH 2023

MARKS: 50

Symbol/*Simbool*	Explanation/*Verduideliking*
M	Method/*Metode*
M/A	Method with accuracy/*Metode van akkuraatheid*
CA	Consistent accuracy/*Volgehoue akkuraatheid*
A	Accuracy/*Akkuraatheid*
C	Conversion/*Herleiding*
S	Simplification/*Vereenvoudiging*
RT	Reading from a table/graph/diagram/*Lees vanaf tabel/grafiek/diagram*
SF	Correct substitution in a formula/*Korrekte vervanging in formule*
O	Opinion/Example/Definition/Explanation/*Opinie/Voorbeeld/Definisie/Verduideliking*
P	Penalty, e.g., for no units, incorrect rounding off, etc./*Penalisasie, bv. vir geen eenhede/verkeerde afronding ens.*
R	Rounding off/*afronding*
NPR	No penalty for rounding/*Geen penalisering vir afronding nie*
NPU	No penalty for the units/*Geen penalisering vir eenhede nie*
AO	Answer only, if correct, full marks/*Slegs antwoord, indien korrek, volpunte*
MCA	Method with consistent accuracy/*Metode met volgehoue akkuraatheid*

This marking guideline consists of 05 pages

Item	Solution [10 marks]	Explanation
1.1	One million four hundred and fifty thousand three hundred and fifty rands. ✓✓A	1A first part of number 1A second part of number (2)
1.2	R 1 450 400✓✓A	2A Correct number (2)
1.3	$\text{Jacob} = \dfrac{3}{7} \times \text{R}1450350 = \text{R}621578{,}57$ ✓MA ✓A $\text{Tshiamo} = \dfrac{2}{7} \times \text{R}1\,450\,350 = \text{R}414\,385{,}72$ ✓MA $\text{Lerato} = \dfrac{2}{7} \times \text{R}1\,450\,350 = \text{R}414\,385{,}72$ ✓CA OR $\dfrac{3}{7} \times \text{R}1\,450\,350 = \text{R}621\,578{,}57$ ✓MA ✓A $\text{R}1\,450\,350 - \text{R}621578{,}57$ ✓MA $= \text{R}828\,771{,}43$ $\dfrac{R828\,771{,}43}{2} = \text{R}414\,385{,}72$ ✓CA	1MA fraction ³⁄₇ 1A R621578,57 1MA multiplying by fraction 1 CA final answer 1MA fraction ³⁄₇ 1A R621578,57 1MA Subtracting correct values 1 CA final answer (4)
1.4	$\text{Jacob} = \dfrac{10}{100} \times \text{R}414\,385{,}72 = \text{R}41\,438{,}57$ ✓MA A ✓CA	1M multiplying by % 1CA final answer (2)

2.1.1	70^0C ✓ ✓RG	2A reading from the graph. (4)
2.1.2	Temperature: Dependent variable ✓✓A Time: Independent variable	2A correct proportion. (2)
2.1.3	**The graph of time v/s temperature**: **The graph is showing a direct proportion** – if you take two points on the graph and you multiply the values you will not get a constant value e.g. (1;100) and (2;90): $1 \times 100 = 100$ and $2 \times 90 = 180$ and $180 \neq 100$ ✓✓ A **For an inverse proportion**: if you multiply the value on x-axis with the corresponding y-value, you will always get a constant value e.g. (1;100); (2;50); (4;25) etc $1 \times 100 = 100$; $2 \times 50 = 100$; $4 \times 25 = 100$. ✓✓A	2 A for direct proportion 2 A for inverse relationship (4)
2.1.4	11 minutes ✓✓A	2A explanation (2)
2.2.1	A = 600 ✓✓RT B = 80 ✓✓RT	2 RT 2 RT
2.2.2	R10,00 ✓ ✓A	2A (2)
3.1	Water ✓ ✓A	2A (2)

3.2	$1\frac{1}{2} = \frac{3}{2}$ ✓RT
	    $= \frac{3}{2} \times 250$ ml ✓ MA
	    $= 375$ ml
	    $= 1\ 875$ ml $\times \frac{2}{100}$ ✓ CA
	    $= 37,5$ml $+ 1\ 875$ ml ✓ MA
	    $= 382,5$ ml ✓ CA
	∴ Mr Mphatsoe's claim is not valid ✓
		1RT correct amount used
		1M correct conversion
		1CA 1 875 ml
		1MA multiplying by 2%
		1CA correct answer
		1O conclusion
		
		(6)

3.3	✓ M $6 \times 0,5 = 3$ cup ✓ CA	1M multiplying by 5 1 CA answer (2)

3.4	✓ M ✓ MA R25,99 × 3 = R77,97 ✓ CA For AFRIKAANS: Use R25,00	1 M multiplication 1 MA multiplying by 3 1 CA correct answer (3)
3.5	$\dfrac{R25,99}{1,15}$ ✓ A ✓ MA = R22,60 ✓ CA For AFRIKAANS use R25	1 A correct fraction 1 MA multiplying by 100 1 CA correct answer (3)
3.6	✓ SF $\dfrac{R25,99 - R21,99}{R21,99} \times 100\%$ ✓ MA ✓ S = 18,2% ✓ CA For AFRIKAANS Use R25	1SF correct values 1MA division and multiplication 1S simplification 1 CA final answer (4)
		[22]
TOTAL [50]		

MATHEMATICAL LITERACY GRADE 10 TEST 1 ANALYSIS GRID

Quest	Item	Topics					Cognitive levels				
		F	M	MP	D	P	TL 1	TL 2	TL3	TL 4	
1	1.1						2				10
	1.2						2				
	1.3								4		
	1.4							2			
2	2.1.1							4			17
	2.1.2							2			
	2.1.3						2				
	2.1.4									2	
	2.1.5						2				
	2.2.1								3		
	2.2.2							2			
3	3.1.1							2			23
	3.1.2								2		
	3.1.3								4		
	3.1.4						4				
	3.1.5							3			
	3.2.1						2				
	3.2.2									6	
	TOTAL					50	14	15	13	08	50
	%					0	28	30	26	16	100
	Target					0%	30%	30%	20%	20%	100 %