Province of the
EASTERN CAPE
EDUCATION

O.R TAMBO
INLAND DISTRICT

GRADE 11

MATHEMATICAL LITERACY PAPER 1

JUNE 2022

MARKS: 75

TIME: 1 ½ HOURS

This question paper consists of 8 pages.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions. Answer ALL questions.
2. Use the ANSWER SHEET to answer QUESTION 2.4
3. Number the answers correctly according to the numbering system used in this question paper.
4. You may use an approved calculator (non-programmable and nongraphical), unless stated otherwise
5. Show ALL the calculations clearly.
6. Round off ALL final answers appropriately according to the context, unless stated otherwise
7. Indicate units of measurement, where applicable
8. Diagrams are NOT necessarily drawn to scale
9. Write neatly and legibly.

QUESTION 1

1.1 Mapule work in a local restaurant in her hometown. She earns R250,00 per week plus tips from generous customers. Below is her income and expenditure statement for the month of February.

INCOME	EXPENDITURE
R250, 00 Per week	Transport : R150, 00
	Groceries : R500, 00
Tips for one month : R600, 00	Rent : R300, 00
	Cellphone contract : R120, 00
	Total expenses…….

1.1.1 Write down her fixed expenses. (2)

1.1.2 Calculate her total income for the month in February, if it has 4 weeks. (3)

1.1.3 Calculate the total expenses for this month. (2)

1.1.4 Express the total expenses as a percentage of the total income. Round off your answer to the nearest percentage. (3)

1.2 Mapule plans to visit her cousin who stays in Johannesburg using a bus. The bus will leave her home at 09:00 and will arrive in town at 14:30.

1.2.1 Calculate the total time that the bus takes to arrive in Johannesburg. (2)

1.2.2 Convert the answer in 1.2.1 to minutes. (3)

[15]

QUESTION 2

A local confectionary is spending R450, 00 on electricity and water weekly. The cost of baking one loaf of bread is R4, 00 which include labour and ingredients. A loaf is sold at R6, 50.

The TABLE below show the weekly cost of baking loaves of bread.

TABLE A: Weekly COST of BAKING LOAVES OF BREAD

Number of loaves	0	60	120	180	240	300
Total cost (in Rands)	R450, 00	R690, 00	R930, 00	R1170, 00	R1410, 00	A

TABLE B: Weekly INCOME For SELLING LOAVES of BREAD

Number of loaves	0	60	120	180	240	300
Total cost (in Rands)	0	R390, 00	R780, 00	B	R1560, 00	R1950, 00

2.1 Write the formula to calculate the cost of baking loaves. (2)

2.2 Determine the value of **A** and **B**. (2)

2.3 Use the formula in QUESTION 2.1 to calculate the cost of baking for 50 loaves. (2)

2.4 On the same set of axes, use the values from the TABLE A and B, and the ANSWER SHEET provided, to draw the graphs illustrating both INCOME and COST of baking loaves of bread. (7)

2.5 Write the coordinates of the break-even point and in the context of the scenario explain what it means. (4)

[19]

QUESTION 3

3.1 Below is a till slip that Thato got from a boutique after buying some clothes for herself.

28/11/18 14 : 22 : 04	Store No : 362
Transaction. No 108 0005	Employee No :2913457
Tax invoice no: 1122346	
Customer name : Thato Martins	
	Rands
19441209 Stipe Self belted dress	R550, 00
46458553 Stripe Towfer Top	R499, 00
Stripe Top Discount @ 33%	A
Subtotal excl. VAT	R768, 00
TOTAL PAID	……..

3.1.1 How many items did Thato buy? (2)

3.1.2 Calculate the total discount paid on the items that she bought. (2)

3.1.3 Calculate the total including VAT paid on this transaction. (3)

3.2 Thato is a resident in the Phakisa municipality and bellow is a tariff on a sliding scale that the municipality uses to charge for water usage.

- **Fixed charge if > 6 kl = R80, 70**
- **Fee for infrastructure if > = R7, 15**

Water Usage	Rate per kiloliter (VAT of 15%) inclusive
From 0 – 6kl	R0
7kl – 30kl	R6, 48
30.1kl – 60 kl	R16, 20
More than 60kl	R21, 60

3.2.1 Calculate the cost if Thato uses 35kl of water charge. (7)

3.2.2 Calculate the new fixed charge if it is increased by 15%. (3)

3.3 Mrs Tsheko is fixing the roof of her house and has decided to take a personal loan of R120 000 from the bank. The bank will charge her 7.5% simple interest per annum. Calculate the total that she will repay the bank after 3 years. (4)

[21]

QUESTION 4

4.1

Product	Rural food prices January 2015 (in Rands)	Urban food prices January 2015 (in Rands)	Price difference Rand per unit
Full cream Long Life Milk (1 ℓ)	12,03	12,59	0,56
Loaf of Brown Bread (700 g)	9,57	10,29	0,72
Maize Meal (5 kg)	32,49	33,73	1,24
Margarine (500 g)	17,89	21,68	3,79
Rice (2 kg)	23,62	23,45	-0,17
Sunflower Oil (750 mℓ)	14,59	17,25	2,66
Ceylon/Black Tea (62,5g)	9,89	9,68	-0,21
White Sugar (2,5 kg)	29,63	26,31	-3,32
Loaf of White Bread (700 g)	10,31	11,42	1,11
Average			A

4.1.1 Arrange the rural food prices in descending order. (2)

4.1.2 Determine the median for rural food prices. (2)

4.1.3 Calculate the range for urban food prices. (2)

4.1.4 Identify the minimum price difference in rand per unit. (2)

4.1.5 Identify ONE product with the largest price difference between Urban and Rural area. (2)

4.1.6 Identify the mode for urban food prices. (2)

4.2 During the first round of the 2011 Rugby World Cup the competing countries played in groups. They played every other team in their group only once. One of the groups (GROUP D) in the table below shows the possible games. The teams in GROUP D were Fiji (F), South Africa (SA), Samoa (S), Wales (W) and Namibia (N). Use the table to answer the questions below.

Table 2

TEAMS	**F**	**SA**	**S**	**W**	**N**
F	**FF**	**FSA**	**FS**	**FW**	**FN**
SA	**SAF**	**SASA**	**SAS**	**SAW**	**SAN**
S	**SF**	**SSA**	**SS**	**SW**	**SN**
W	**WF**	**WSA**	**WS**	**WW**	**WN**
N	**NF**	**NSA**	**NS**	**NW**	**NN**

4.2.1 How many matches did not take place since the teams only played each other once? (2)

4.2.2 How many matches did each team play? (2)

4.2.3 What is the total number of matches played during this group stage of the Rugby World Cup (2)

4.2.4 What is the probability that a team won at least ONE of their matches? (2)

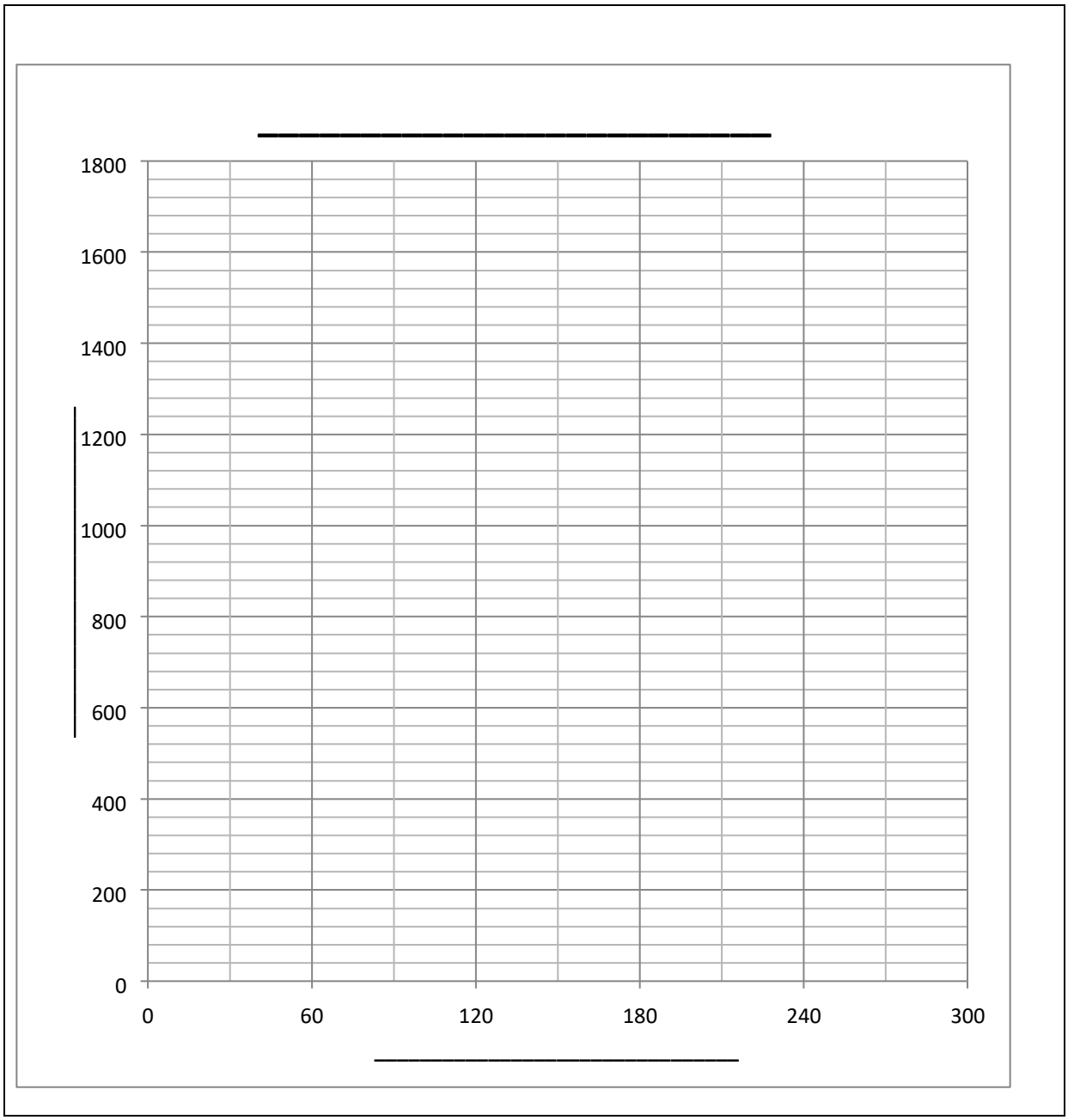
[20]

TOTAL MARK [75]

ANSWER SHEET

QUESTION 2.4

Name:.....



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NATIONAL
SENIOR CERTIFICATE

GRADE 11

MATHEMATICAL LITERACY MEMORANDUM

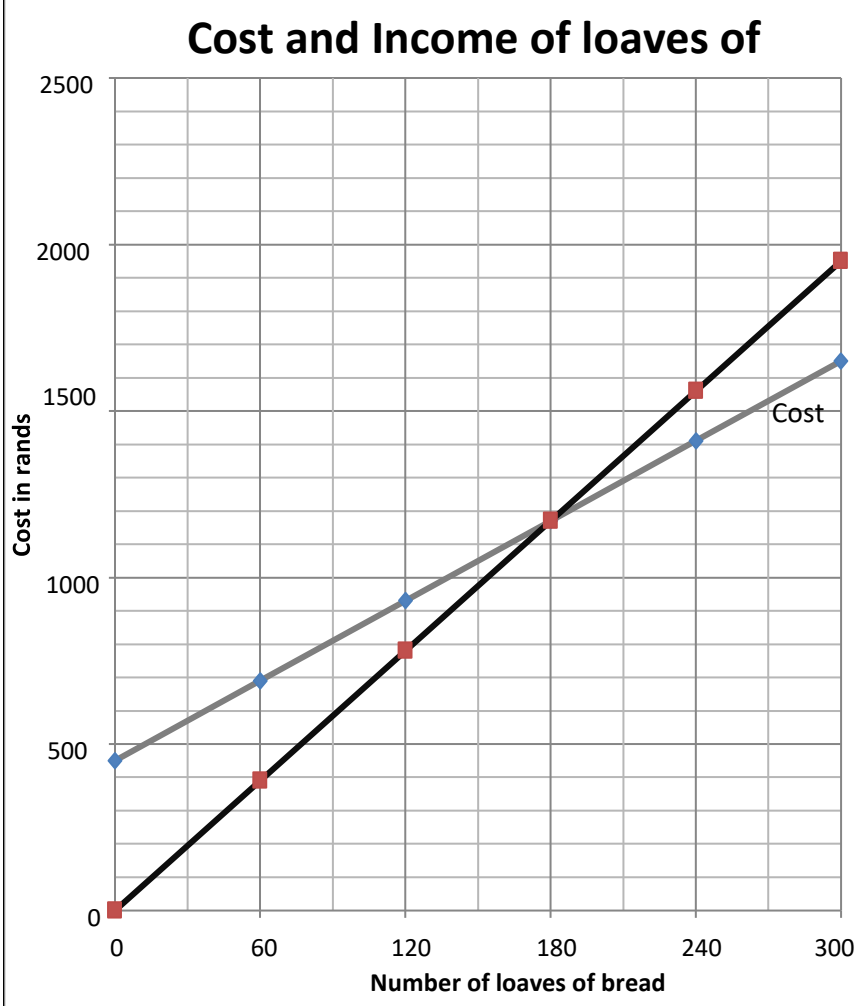
MARKS: 75

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**