



Hillcrest High School

Grade 11

MATHEMATICAL LITERACY P1 NOVEMBER 2024

MARKS: 100

TIME: 2 Hours

EXAMINER: Mrs J. Leuschke

MODERATOR: Ms G. Stow

Instructions:

Read the following instructions carefully before answering the questions.

1. This question paper consists of 4 questions and 6 pages.
2. Clearly show ALL calculations, diagrams, graphs, etc which you have used to determine your answers.
3. Answers only will NOT necessarily be awarded full marks.
4. An approved scientific calculator (non-programmable) may be used, unless otherwise stated.
5. If necessary, answers should be rounded off to TWO decimal places, unless otherwise stated, or appropriately within the given context.
6. Number the answers EXACTLY as the questions are numbered.
7. Diagrams are not necessarily drawn to scale.
8. It is in your own interest to write legibly and to present your work neatly.

QUESTION 1

1.1 Moses earns a gross salary of R10 500 per month. The basic monthly expenses used from the income are as follows:

Housing expense 21%; Food 36%; Transport 10%; Cellphone bills 1,9%. The rest is for savings.

Use the above information to answer the following questions.

1.1.1 Calculate the total gross salary per annum. (2)

1.1.2 Determine the amount of the monthly food expense. (2)

1.1.3 Write down the ratio of the housing percentage to the food percentage in the simplest form. (2)

1.1.4 Calculate Moses's percentage for savings from his salary. (3)

1.2 Thando, a Mathematical Literacy teacher, collected and analysed test results of his class. The test was marked out of a total of 50. The results of the learners are indicated below.

38	21	12	18	41
28	24	34	10	35

Use the above information to answer the questions that follow.

1.2.1 Is the above data primary or secondary? (2)

1.2.2 Write down the highest mark obtained in the test. (2)

1.2.3 Explain the meaning of the term 'median'. (2)

1.2.4 Write down the mark out of 50 for a learner who obtained 70% in the test. (2)

1.2.5 Write down the number of learners who failed the test, if the pass mark is 20 out of 50. (2)

1.3 A shopkeeper bought a dress for R750 and sold it, making a loss of R50.

1.3.1 Explain the meaning of the term 'loss' in this context. (2)

1.3.2 Calculate the percentage loss made on the sale. (2)

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QUESTION 2

2.1 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 : <u>Thato Martins</u>			
			Rands
19441209	Stipe	Self belted dress	550.00
46458553	Stripe	Twofer Top	499.00
Stripe Top Discount @ 33%			A
Subtotal excl. VAT			769,57
TOTAL PAID		

- 2.1.1 How many items did Thato buy? (2)
- 2.1.2 Calculate the total discount allowed on the items she bought. Round your answer down to the nearest whole rand. (2)
- 2.1.3 Calculate the total including VAT paid on this transaction. (3)
- 2.1.4 Thato stated that after the discount the ratio of the price of the dress : top was 9 : 5. Verify whether her statement is correct or not. (4)

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

Fixed charge if > 6kl = R80,70

Water usage	Rate per kl (VAT of 15%) inclusive
Up to 6kl	0
6kl – 30kl	R6,48
30kl – 60kl	R16,20
More than 60kl	R21,60

- 2.2.1 Calculate the cost if Thato uses 35kl of water. (7)
- 2.2.2 Thato’s neighbour received a bill for R1118,17. Calculate how many kl of water they used. (7)
- 2.2.3 Calculate the new fixed charge if it is increased by 15%. (3)

2.3 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% compound interest per annum. Calculate the total that she will repay the bank after 3 years, rounded to the nearest R10. (5)

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QUESTION 3

Study the information on eggs in Incubators and Poults/Chickens hatched during the different months in the United States for the 2016 – 2017 period.

Month	Eggs in incubators on the first of the month	Poults/Chickens hatched during the entire month
	2016–2017	2016–2017
September	28 927	23 645
October	28 409	23 572
November	27 179	22 782
December	28 795	25 422
January	29 961	25 332
February	29 906	23 598
March	30 030	25 719
April	28 597	23 179
May	28 825	24 067
June	29 441	25 075
July	29 271	24 616
August	29 725	24 786
TOTAL	-----	-----

3.1 Determine the number of eggs that did not hatch in December. (2)

3.2 Calculate the mean number of eggs in incubators for the 2016 – 2017 period. (3)

3.3 Write down the modal value for the number of eggs in the incubators on the first of the month. (2)

3.4 Determine the range of the Poults hatched the entire month during the 2016 – 2017 period. (2)

3.5 Calculate the median of the Poults hatched for the entire month during the 2016 – 2017 period. (3)

3.6 Express the number of hatched poults during the entire month of March as a ratio to the total hatched during the 2016 – 2017 period. Give your answer in unit form. 1 : ---- (4)

3.7 Determine the probability, as a percentage, of randomly selecting an egg in the incubator which will hatch in July. Give your answer rounded to the nearest whole percentage. (3)

3.8 The company decides that they will be using a pie chart to display the above data. Would this type of graph be suitable? Give a reason for your answer. (3)

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QUESTION 4

4.1 Ms Fasi started a small business by selling pies at schools and factories close to her workplace. She pays rent of R1500 per month. It costs her R5,00 to make and package a pie and she sells them for R15,00 each.

Study the table below and answer the questions that follow.

The cost and income for the business.

Number of Pies	0	50	100	150	250	350
Total Cost in Rand	1 500	A	2 000	2 250	2 750	3 250
Income in Rand	0	750	1 500	2 250	B	5 250

The following formulae are used to calculate the cost and income respectively.

Cost = R1 500 + R5,00 × n

Income = R15,00 × n; where n represents the number of pies

4.1.1 Use the table to determine Ms Fasi’s break-even point. (2)

4.1.2 Calculate the value of A. (2)

4.1.3 Ms Fasi’s friend says that if she sells 250 pies, her income will be more than R4000. Verify, showing calculations, whether or not her friend is correct. (3)

4.1.4 Ms Fasi states that if she makes 400 pies and sells 370, that she makes a profit of more than R2000. Verify, showing all calculations, whether or not she is correct. (5)

4.2 The average inflation rates for the period 2016 to 2017 are shown in the table below.

	2016	2017
Average inflation rate	4,51%	6,59%
Cost of a brown bread	R9,99	A

4.2.1 Explain the meaning of the term ‘inflation rate’. (2)

4.2.2 Calculate the percentage change in the inflation rate. (3)

4.2.3 Ms Fasi stated that the price of a loaf of bread at the beginning of 2018 will be more than R11,50. Verify whether or not her statement is correct. Show all calculations. (5)

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