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GRADE 11

NOVEMBER 2020

**MATHEMATICAL LITERACY P1
EXEMPLAR**

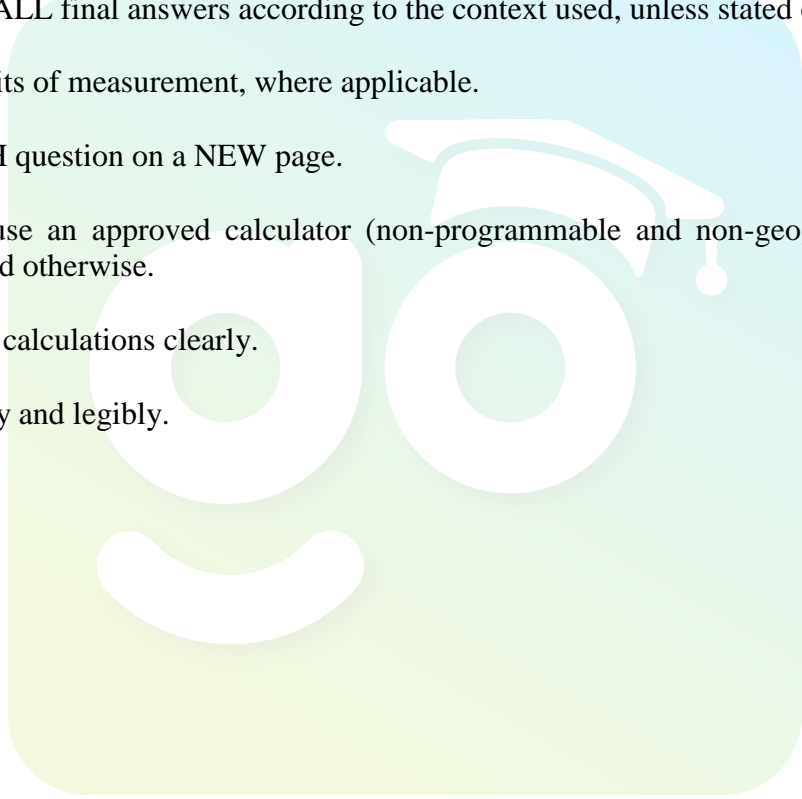
MARKS: 100

TIME: 2 hours

This question paper consists of 9 pages, including an answer sheet.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions. Answer ALL the questions.
2.
 - 2.1 Use the ANSWER SHEET for QUESTION 4.3.2.
 - 2.2 Write your NAME and GRADE in the spaces provided on the ANSWER SHEET for QUESTION 4.3.2.
Hand in the ANSWER SHEET with your ANSWER BOOK.
3. Number the answers correctly according to the numbering system used in this question paper.
4. Maps and diagrams are not necessarily drawn to scale, unless stated otherwise.
5. Round off ALL final answers according to the context used, unless stated otherwise.
6. Indicate units of measurement, where applicable.
7. Start EACH question on a NEW page.
8. You may use an approved calculator (non-programmable and non-geographical), unless stated otherwise.
9. Show ALL calculations clearly.
10. Write neatly and legibly.



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 mark 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 achieved 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)

[23]

QUESTION 2

- 2.1 Mrs Rogue invested money monthly from 2016 to 2020 at Company A. She terminated her investment and received the statement below from Old Mutual:

Contract number	Contracting party	Name of Investment plan	Start date of contract	Last premium due date	
17801249	R. Rogue	Smart MAX Focused Education Plan/1	01/07/2016	30/06/2031	
Fund value as at 23 March 2020					
Investment fund		Unit price (cents)	Number of units	Fund value	
Allan Gray Balanced Fund C Class		8 266,470	A	R8 038,07	
Total				R8 038,07	
Difference between fund value and termination value					
Fund value				R8 038,07	
Reduction fees and transaction charges				B	
Termination value				R6 995,25	
Withdrawals up to 23 March 2020				R765,57	
Expected premium details as at 23 March 2020					
Current premium	Annual Increase rate	Next premium increase	New premium	Investment fund(s)	Premium Split
R332,75 monthly	...	01/07/2020	R366,02	Allan Gray Balanced Fund C Class	100%
Total contributions since contract start date					
Total premiums paid				R12 924,75	

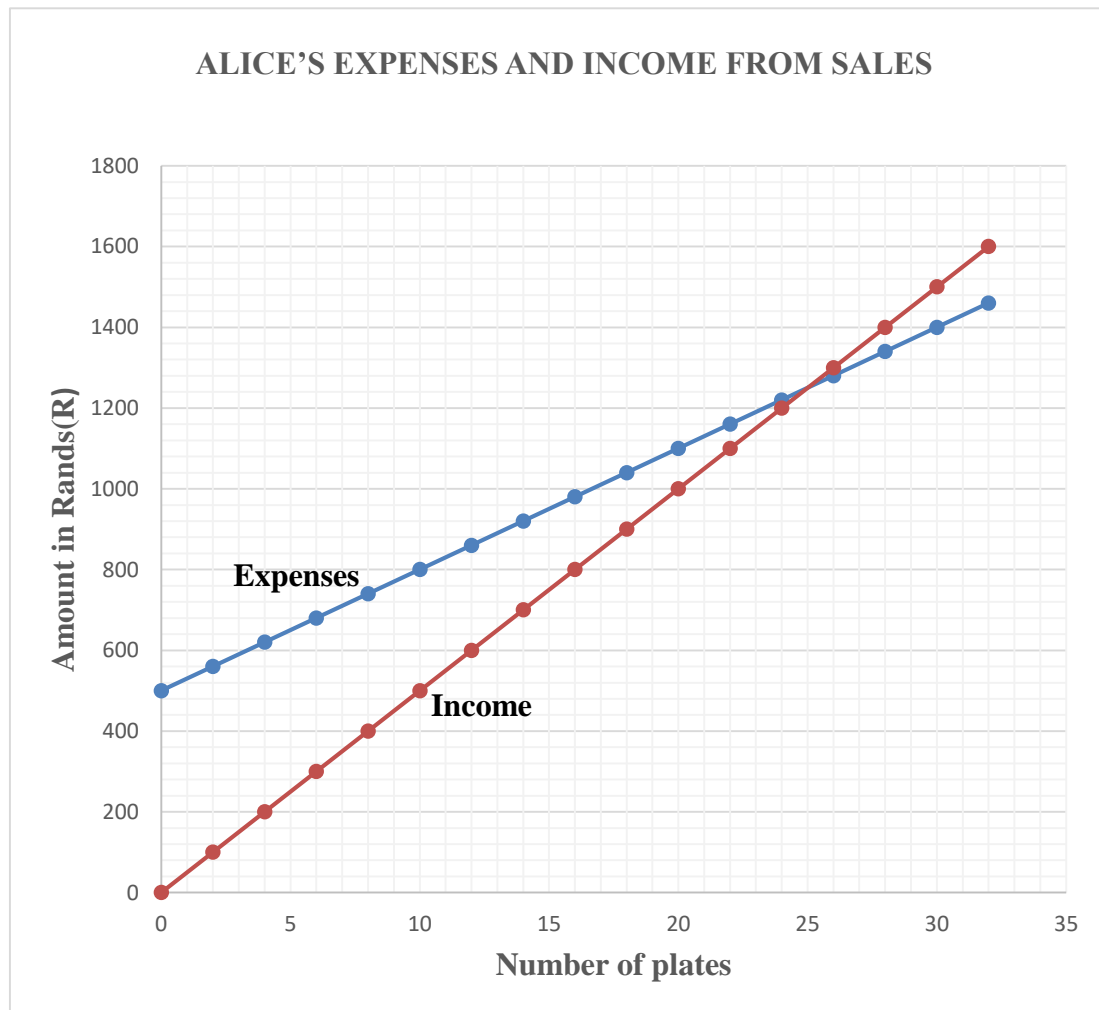
- 2.1.1 Write down the name of the investment plan that Mrs Rogue has. (2)
- 2.1.2 Calculate the value of **A**, the number of units earned from the given fund value. (4)
- 2.1.3 Show by means of calculations that Mrs Rogue lost 45,88% of the total premiums she contributed towards the fund by terminating her investment before the last premium. (4)
- 2.1.4 Calculate the value (in Rands) of **B**, the reduction fees and transaction charges. (2)
- 2.1.5 Write down the withdrawal value as at 23 March 2020. (2)

- 2.1.6 Calculate the percentage increase on the monthly premium. Give your final answer to the nearest percentage.

You may use the following formula:

$$\text{Percentage increase} = \frac{\text{new premium} - \text{current premium}}{\text{current premium}} \times 100\% \quad (4)$$

- 2.2 Alice sells food from a kiosk that she rents in a township. The expenses associated with ingredients and labour for a plate amount to R30. The formula for expenses: **Expenses = R500 + R30 × Number of plates** She sells food per plate. The graph below shows her expenses and income for a month.



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

- 2.2.1 Write down the independent variable in the above context. (2)
- 2.2.2 Determine the amount Alice pays as fixed expenses. (2)
- 2.2.3 Write down the formula for the income if a plate is sold at R50, in the form of:
Income = ... (2)
- 2.2.4 Determine the profit at the break-even point. (2)
- 2.2.5 Determine the loss when 8 plates are sold. (4)

[30]

QUESTION 3

The Global Wellness Institute did research about the amount of spa revenue generated in different regions of the world in 2017.

TABLE 1: NUMBER OF SPAS, REGIONS AND THE REVENUE GENERATED

Regions	Names of Regions	Number of Spas	Revenue in Billion dollars (\$b)
P	North America	30 394	22,9
Q	Latin America-Caribbean	13 856	6,6
R	Sub-Saharan Africa	3 984	...
S	Middle East – North Africa	6 057	2,8
T	Europe	46 282	33,3
V	Asia – Pacific	48 679	26,5
	TOTAL

[Source: globalwellnessinstitute.org]

Use the information above to answer the questions that follow.

- 3.1 Calculate the total number of spas used for the research in 2017. (2)
- 3.2 Calculate the mean number of spas used. Give your final answer to the nearest whole number. (2)
- 3.3 Express the number of spas in Europe as a percentage of the total number of spas. (2)
- 3.4 Determine the number of regions that lies above the range number of spas. (2)
- 3.5 Write down the unit ratio of spas in regions **P** and **V**. (3)
- 3.6 Calculate the total revenue in billion dollars for the spas if sub-Saharan Africa's revenue is \$5,0 billion less than Latin America-Caribbean's revenue. (4)
- 3.7 Calculate the median revenue of the regions. (3)
- 3.8 Determine the probability (as a percentage) of randomly selecting a region with more than 40 000 spas. (3)

[21]

QUESTION 4

- 4.1 GOOD BOYS CAR WASHING BAY is in an area where water is charged according to the water tariffs structure shown in TABLE 2 below.

TABLE 2: WATER TARIFF STRUCTURE

Block	Usage in kilolitre (kl)	Normal Charge per kilolitre (kl) (Excluding VAT)
1	0 – 6	R0,00
2	+6 – 15	R9,35
3	+15 – 30	R11,16
4	+30 – 45	R12,53
5	+45 – 60	R13,98
6	60+	R15,34

NOTE: VAT is Value Added Tax. The VAT rate is 15%.

Use TABLE 2 above to answer the question that follow.

Calculate how much GOOD BOYS CAR WASHING BAY pays a month including VAT when they use 25 kl of water and give a reason why a step up (increasing block rate) system of water tariffs is used to charge water consumption other than a flat single rate.

(6)

- 4.2 Andile received a donation from his brother who works in Rwanda. The donation was 745 614,04 Rwanda Francs (RWF). The bank deducted 10% for bank charges. Andile states that he will receive R12 750. Verify the statement with the necessary calculations.

Use the exchange rate R 0,019 = 1 RWF

(6)

- 4.3 Ibanda High School recorded absentees in the Grade 11 Mathematical Literacy class during the first week when schools reopened after the COVID-19 pandemic break. The data is shown in the table below.

	Monday	Tuesday	Wednesday	Thursday	Friday
Girls	4	6	8	7	10
Boys	5	3	8	9	7

Use the above information to answer the questions that follow.

- 4.3.1 Determine the probability that a learner chosen at random was absent on Wednesday.

(3)

- 4.3.2 Complete the double bar graph on the ANSWER SHEET provided by plotting the missing bars for the number of boys and girls absent.

(5)

4.4

A Grade 11 Mathematical Literacy class at Ibanda High wrote an examination marked out of 100 marks. The results arranged in ascending order are shown below.

23	41	42	50	50	51	54	55	56	57
60	61	65	66	66	67	68	69	70	70
70	72	C	74	76	79	82	85	86	88

Use the above information to answer the questions that follow.

4.4.1 The mean of the above data is equal to 64,2. A learner calculated that the value of **C** in the above data is 74. Verify, with the necessary calculations, whether the answer is valid. (4)

4.4.2 The frequency table of the above data is shown below.

Class interval	Frequency
20–29	1
30–39	D
40–49	2
50–59	7
60–69	8
70–80	8
80–89	4

Determine the value of **D** and give a reason for your answer. (2)

[26]

TOTAL: 100

ANSWER SHEET

QUESTION 4.3.2

NAME OF LEARNER: GRADE 11:

Number of absent learners during the week

