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Mathematical Literacy – Grade 12
Finance

Time: 70 minutes

Examiner: C. Sam

Marks: 60

Instructions

1. Write your full name at the top of this question paper.
2. This paper consists of 5 questions and 7 pages.
3. Answer all questions in the spaces provided on this question paper.
4. You may use a non-programmable calculator.
5. Answers should be rounded off to **two decimal places** unless otherwise stated, or if the real-life context requires rounding up or down.

Question 1**[11]**

Naledi plans to study away from home. She draws up the following monthly budget to control her monthly spending. Use the above budget to answer the questions that follow.

Income		
Monthly Allowance		R6 000
Expenses		
Rent	R2 200	
Food	R1 800	
Toiletries	R400	
Doctor/Dentist	R300	
Cellphone	R150	
Entertainment	R300	
Transport (taxi/Bus fare)	R300	
Surplus/deficit		R550

a) Give one example from Naledi budget of:

1) a fixed expense. (2)

Rent, cellphone, transport

2) a variable expense. (2)

Food, toiletries, transport

3) an occasional expense. Downloaded from eduresourceza.com

(2)

Entertainment, doctor/dentist

b) Show how the surplus/deficit amount of R550 was calculated.

(3)

$$2200 + \dots + 300 = 5450$$

$$6000 - 5450 = R550$$

c) Naledi's dad works in Nigeria and sends her monthly allowance in Nigerian naira. Using the table below, convert Naledi's allowance into ZAR.

(2)

Currency	For 1 South African Rand
Egyptian pound (E£)	1,0694
European euro (€)	0,0561
New Zealand dollar (\$)	0,0969
Nigerian naira (₦)	26,0496
U.S. dollar (\$)	0,0683

$$R1 : \text{₦} 26,0496$$

$$R6\,000 : \text{₦} 156\,297,60$$

Question 2

[8]

Kaden needs to purchase a new laptop bundle to be able to do his work in the field. He finds the following advertisement online.



Option 1 Cash Price:
R11 099 (including VAT)

Option 2 Hire-purchase:

Deposit 10% of the cash price.

Monthly instalments:
R564,23 × 36 months

Use the above advertisement to answer the questions that follow.

a) Calculate the cash price of the laptop in Option 1 excluding VAT.

(2)

$$OP = \frac{11\,099}{1,15}$$

$$= R9\,651,30$$

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b) Calculate the deposit amount for this laptop bundle using Option 2.

(2)

$$\begin{aligned} \text{Dep} &= 11099 \times 10\% \\ &= R 1109,90 \end{aligned}$$

c) Calculate the total cost of purchasing this bundle on the hire-purchase option.

(4)

$$\begin{aligned} \text{Total} &= 1109,90 + 564,23 \times 36 \\ &= R 21422,18 \end{aligned}$$

Question 3

[6]

Amahle is investigating buying a house. Consider the advert below which is found in a property magazine of the house she is considering buying:

Buy-A-House Lenders will only offer a bond to a prospective homeowner if:

- 18% of the value of the property is paid in cash as a deposit, **and**
- the monthly instalment owed to the lender is 25% of the buyer's monthly income.

*Note: All bonds issued by the lender, are issued at **10,5% p.a. compounded monthly for a 20-year period**. The interest rate will change accordingly if the loan period is either lengthened or shortened.*

R 7 250 000 House for sale in Dunkirk Estate
Bond Costs ▾ Dunkirk Estate, Ballito

Gallery My Notes Web Ref: P24-102581328



a) If Amahle's deposit is R1 305 000, use the formula below to determine the monthly instalment she would pay on the above property.

(3)

$$x = \frac{P \times i}{[1 - (1+i)^{-n}]}$$

x = monthly instalment,

P = loan amount,

i = interest rate,

n = number of instalments

$$\begin{aligned}
 DC &= 5945000 \times \frac{10,5\%}{12} \\
 &\quad [1 - (1 + \frac{10,5\%}{12})^{-20 \times 12}] \\
 &= R59353,68
 \end{aligned}$$

- b) Determine what her monthly salary would have to be to qualify for a bond from Buy-A-House Lenders. (3)

$$\begin{aligned}
 \text{Salary} &= 59353,68 \\
 &\quad 25\% \\
 &= R237414,72
 \end{aligned}$$

Question 4

[19]

- a) Lwandile, a 36-year-old man, with a wife and two children, earns a salary of R44 000 per month. He pays R5 800 for medical aid for his whole family, a pension plan of R12 200 per month and he pays UIF every month.

- 1) Calculate Lwandile's monthly tax deductible(s). (3)

$$\begin{aligned}
 \text{Pension} &= 44000 \times 27,5\% \\
 &= R12100 \quad \text{which is less than } R12200
 \end{aligned}$$

- 2) Calculate Lwandile's annual taxable income. (3)

$$\begin{aligned}
 TI &= 44000 - 12100 \\
 &= 31900 \times 12 \\
 &= R382800
 \end{aligned}$$

- 3) Using the tables below, determine his Annual Tax Payable. (6)

2022 tax year (1 March 2021 - 29 February 2022)

Taxable income (R)	Rates of tax (R)
1 – 216 200	18% of taxable income
216 201 – 337 800	38 916 + 26% of taxable income above 216 200
337 801 – 467 500	70 532 + 31% of taxable income above 337 800
467 501 – 613 600	110 739 + 36% of taxable income above 467 500
613 601 – 782 200	163 335 + 39% of taxable income above 613 600
782 201 – 1 656 600	229 089 + 41% of taxable income above 782 200
1 656 601 and above	587 593 + 45% of taxable income above 1 656 600

Tax Rebates

Primary	R15 714
Secondary (65 and older)	R8 613
Tertiary (75 and older)	R2 871

Tax Thresholds

Under 65	R87 300
65 and older	R135 150
75 and older	R151 100

Medical Tax Credit Rates for the 2019 to 2023 tax years

Per month (R)	2022
Main member	R332
First dependent	R664
Each additional dependent	R224

$$\begin{aligned}
 TP &= 70532 + 31\% (382800 - 337800) \\
 &= 84482 - 15714 - (332 + 664 + 224 \times 2) \times 12 \\
 &= R51440
 \end{aligned}$$

4) Calculate his monthly income tax.

(2)

$$\begin{aligned}
 MIT &= 51440 \div 12 \\
 &= R4286,67
 \end{aligned}$$

5) Determine his monthly nett salary.

(5)

$$\begin{aligned}
 \text{Nett} &= 44000 - 4286,67 - 12100 - 5800 \\
 &= R21813,33 - 177,12 \\
 &= R21636,21
 \end{aligned}$$

Question 5

[16]

Consider the following three internet options from SuperWeb:

- **Option A:** *Uncapped Fibre. Fixed cost of R700 per month.
- **Option B:** Capped Fibre 100 gigabytes (GB) of *capped data per month. Fixed cost of R600 per month. If you run out of data, you can "top up" at a rate of R3 per GB.
- **Option C:** Fixed LTE. No fixed cost. R5 per gigabyte (GB).

*Uncapped: This means you have unlimited data usage per month.

*Capped: This means you have a limited amount of data usage per month.

- a) Use the equation **Cost = 600 + 3(n - 100)**, where n is the number of gigabytes used per month, to calculate the missing values **(a)** and **(b)** for **Option B** in the table below: (2)

Number of gigabytes (n)	0	100	101	125	(b): 150	200
Cost in rand	600	600	(a): 603	675	750	900

- b) Use **Option C** to calculate the missing values (i), and (ii) in the table below: (2)

Number of gigabytes (n)	0	100	(ii): 120	200
Cost in rand	(i): 0	500	600	1 000

- c) Write down an equation that shows the relation between the cost per month (C) and the number of gigabytes (n) used during the month for **Option C**. (2)

$$C = 5 \times n \quad \text{or} \quad C = 5n$$

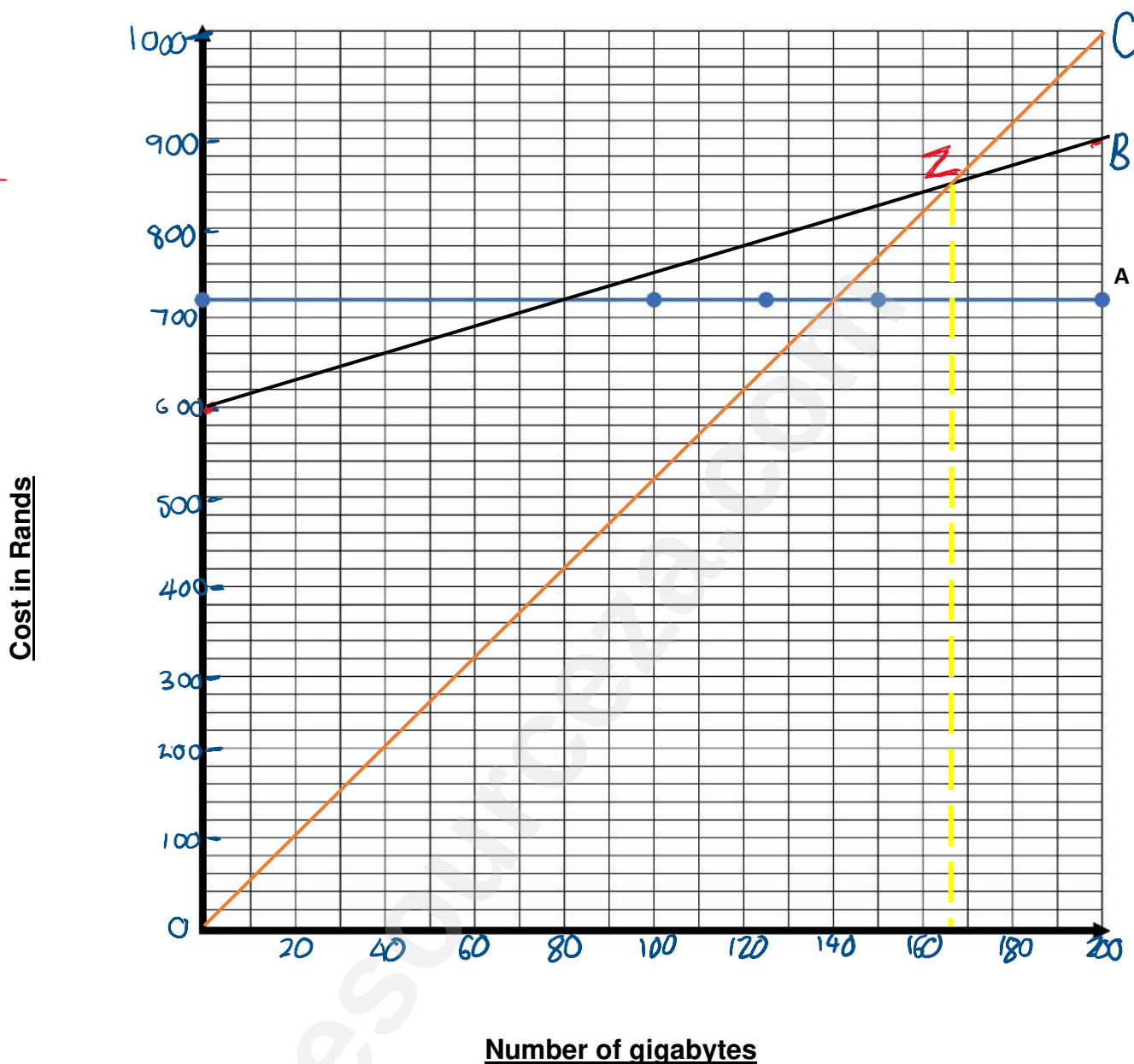
- d) The axes on the next page has the graph for Option A already drawn. Draw the line graphs for **Option B** and **Option C**. (6)

Use the following scale:

Horizontal (x-axis): 2 blocks = 20 units

Vertical (y-axis): 5 blocks = 100 units

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Figure 1: Line graphs showing cost of each internet option



- e) Indicate using the letter **Z** on the y-axis where the internet options cost the same for **Options B and C**. State how many gigabytes have been used at point Z. (2)

± 168

- f) Use your graphs to justify when **Option C** would be the most cost-effective. (2)

From 0 to ~140 Option C is the most cost-effective as the graph for option C reflects a cost that is lower than Option A and B.