Tutorial Letter 102/0/2023

BASIC FINANCIAL MATHEMATICS IN INTERMEDIATE AND SENIOR PHASE

MAE203P

Assignment 2 - Semester 2

Mathematics Education

This tutorial letter contains important information about your module.

BARCODE

MAE203P/102/0/2023

Question 1

1.1 You are planning to introduce your Grade 8 learners to a topic of compound interest and simple interest.

Design a meaningful activity that you will give to your learners in the introduction phase of your lesson.

Guideline and marks				
	0 mark	**1 mark**	**2–3 marks**	**4–6 marks**
Activity before the lesson to activate learners' prior knowledge	No activity is indicated for activating learners' prior knowledge.	An activity is described but it is not appropriate for activating learners' prior knowledge/ introducing learners to the new topic.	Some elements in the activity connect to learners' personal experiences and are appropriate for activating their prior knowledge/ introducing them to the new topic.	The activity sufficiently connects to learners' personal experiences and is appropriate for activating their prior knowledge/ grabbing their attention/ arousing their interest while they are introduced to the new topic.

(10)

1.2 Your friend, who lives in South Africa, is considering buying a laptop that is advertised for $1 000 in the catalogue of an American online store. The store charges a shipping fee of $45 for every item a customer purchases outside of the United States. Your friend does not have an idea how much money he will need to purchase this laptop and asks for your assistance.

Your friend gives you an outline of his monthly budget (refer to the table below) and asks you to analyse it.

Monthly income	**R10 500**
List of expenses	**Monthly costs**
Rent	R2 500
Groceries	R1 500

Medical expenses	R450
School fees	R750
Prepaid airtime	R265
Water and electricity	R500
Transport	R1 800

1.2.1 Advise your friend on exchange rates and how they work so that he can make an informed decision before he buys the laptop from the online store. (4)

1.2.2 You checked the current rand to dollar exchange rate and found that 1 US dollar is equal to R17,95. Make calculations in which you show how much money in rands your friend will have to spend to buy the laptop. (4)

1.2.3 Based on your analysis of your friend's monthly budget and the calculations you made in 1.2.2, does your friend have enough money to buy the specific laptop? Explain your answer and show calculations. (4)

1.2.4 Advise your friend on savings and investments, outlining the similarities and the differences between them. (5)

1.2.5 With reference to your friend's monthly budget, calculate how long it will take him to save up enough money to be able to buy the laptop from the online store. (3)

1.2.6 A store in South Africa has the same laptop on sale for R16 000 in cash or on hire purchase involving a 15% deposit and a balance to be paid over 36 months at 11% simple interest per annum.

1.2.6.1 Advise your friend on how a hire-purchase agreement could work to his advantage. (5)

1.2.6.2 Will your friend be able to pay a cash deposit out of his budget for one month if he chooses a hire-purchase loan option?
Show calculations. (3)

1.2.6.3 Calculate the monthly instalment your friend will have to pay. (4)

1.2.6.4 Calculate the total amount your friend will pay for the laptop. (2)

1.2.6.5 Compare the cash price of the laptop with the hire-purchase option and calculate the percentage of money that will be added to the cash price. (2)

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Question 2

2.1 Phillip is an unemployed graduate and received a lump sum of R4 200 in social relief of distress (SRD) during the Covid-19 period. Phillip has always wanted to open a barber shop in his area since people from his community travel long distances for this service. To raise the finances needed to pursue this business idea, Phillip plans to invest all the money in an account paying 7% interest per annum, compounded annually.

2.1.1 Phillip wants the SRD amount he received to grow to R6 000. Calculate how long it will take him to achieve his goal. (4)

2.1.2 Phillip realises that it is going to take longer that he anticipated to have R6 000 to start a barber and beauty product shop. He decides to borrow R1 800 to add to the SRD amount and put all the money in a bank account that he intends to use for his business venture.

Phillip then buys the following barbering tools and products:

- Straight-blade scissors; straight razor; hair comb; electric clipper; duster brush – **all for R3 500 in cash**

- Hygiene products; ladies' hair and beauty products – **all for R1 500 in cash**

2.1.2.1 Use the information in 2.1 and 2.1.2 above to construct a statement of financial position for Phillip's business. (14)

2.1.2.2 Explain to Phillip what the balance sheet you constructed in 2.1.2.1 tells you about his business. (6)

2.2 The hair and beauty products that Phillip is selling seem to be in demand. In the first month, he sold all his hair and beauty products for R2 800. He then bought new stock worth R3 000 in cash. In the second month, he sold 75% of his stock for R5 500. He runs his business from the backroom at his home and spends R100 on prepaid electricity every month. He also pays a transport fee of R150 for every batch of stock he receives.

2.2.1 Using the information presented above, draw up an income statement (profit or loss account) for Phillip's business venture at the end of the second month. (15)

2.2.2 Explain to Phillip the importance of having an income statement (profit or loss account) for his business and how he can use it to manage his business.(6)

2.2.3 Calculate the gross margin at the end of the second month and explain to Phillip what the value that you calculated means. (3)

2.2.4 Calculate the net margin and explain what it means for Phillip's business.(3)

2.3 Phillip bought too much stock in the third month and decided to give some of the stock to a relative to sell for him. They made an agreement that the relative will earn commission of 11% for every R1 000's worth of stock he sells and 5% for every amount below R1 000.

In that month, Phillip's relative sold R4 450's worth of stock. Calculate the total amount Phillip will have to give to his relative as commission. (3)

[54]

TOTAL MARKS: 100

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DECLARATION

(You're your assignment script will not be marked if this is not completed

I, ……

(Name & Surname)

Student number: ……

Module code: …….

Hereby declare the following:

I understand UNISA'S policy on plagiarism. This examination is my original work produced by myself. I have duly acknowledged all the other people's work (both electronic and print) through the proper reference techniques as stipulated in this module.

I have not copied work of others and handed it in as my own. I have also not made my work available to any fellow students to submit as their own.

Signature:…….Date:…….