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868TUTORS

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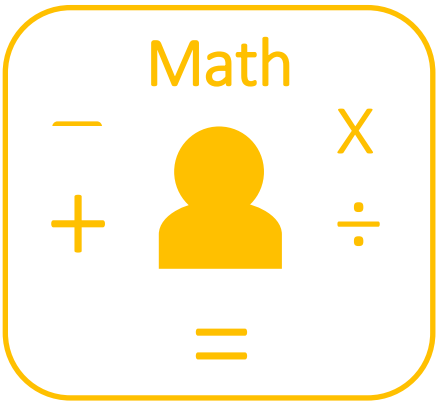
Preparation for

High School Mathematics

Consumer Arithmetic II

Solutions



Instructions and Tips:

- ✓ **You have 60 minutes to complete this worksheet**
- ✓ **This worksheet consists of 7 questions**
- ✓ **Write answers in the spaces provided**
- ✓ **All working must be clearly shown**
- ✓ **Answers should be given to 2 decimal places**

Student Name: _____

Student ID: _____

Date: _ _ / _ _ / _ _ _ _

Total Score:

Highest Score:

Tutor's Comments:

Question 1

(a) The table below shows Georgia's shopping bill. Some information was not included

Items	Quantity	Unit Price (TTD)	Total Cost (TTD)
Cassava flour	6.5 kg	2.40	A
Pimentos	6 bags	B	52.80
Coconut Water	C liters	12.35	98.80
Sub-Total			167.20
15% VAT (to the nearest cent)			D

Calculate the values of A, B, C, and D

A: *Unit price of Cassava Flour (1 kg) = 2.40 TTD*

6.5 kg = 2.40 TTD × 6.5
6.5 kg = **15.60 TTD**

B: *Total cost (6 bags) = 52.80 TTD*

Cost of 1 bag = $\frac{52.80}{6}$ = **8.80 TTD**

C: *Total cost = 98.80*

Unit cost (liters) = 12.35 TTD
Number of litres = $\frac{98.80}{12.35\ \text{TTD}}$

Number of litres = **8**

D: *15% VAT*

$\frac{15}{100} \times 167.20 =$ **25.08 TTD** **(5 marks)**

(b) VAT was reduced from 15% to 12.5%. Calculate the reduction in Georgia's bill.

15% VAT

$\frac{15}{100} \times 167.20 =$ **25.08 TTD**

12.5% VAT

$\frac{12.5}{100} \times 167.20 =$ **20.90 TTD**

Reduction in Georgia's bill = 25.08 TTD - 20.90 TTD

Reduction in Georgia's bill = **4.18 TTD**

(2 marks)

Question 2

(a) How much simple interest is due on a loan of $14,000 for two years if the annual rate of interest is ½ percent?

$$\textit{Simple Interest} = \frac{\text{Principal} \times \text{Rate} \times \text{Time}}{100}$$

$$\textit{Simple Interest} = \frac{14{,}000 \times 0.5 \times 2}{100}$$

Simple Interest = $140

Principal = 14,000

Rate = 0.5%

Number of years = 2

(2 marks)

(b) How much simple interest is due on a loan of $20,000 for three years if the annual rate of interest is 5 percent?

$$\textit{Simple Interest} = \frac{\text{Principal} \times \text{Rate} \times \text{Time}}{100}$$

$$\textit{Simple Interest} = \frac{20{,}000 \times 5 \times 3}{100}$$

Simple Interest = $3000

Principal = 20,000

Rate = 5%

Number of years = 3

(2 marks)

Question 3

(a) In the Republic of Trinidad and Tobago, 3 litres of diesel cost TT$5.16

Calculate the cost of 5 litres of diesel in Trinidad and Tobago

Cost of 3 litres of diesel = 5.16 TTD

Cost of 1 litre of diesel $= \frac{5.16 \text{ TTD}}{3}$

Cost of 5 litres of diesel $= \frac{5.16 \text{ TTD}}{3} \times 5$

Cost of 5 litres of diesel = 8.60 TTD

(2 marks)

(b) How many litres of diesel can be bought for TT$100.00 in Trinidad and Tobago?

5.16 TTD = 3 litres of diesel

1 TTD $= \frac{3 \text{ litres}}{5.16}$

100 TTD $= \frac{3 \text{ litres}}{5.16} \times 100$

100 TTD = 58.14 litres

(2 marks)

Question 4

A man in Barbados invests 12,000 Barbados Dollars (BDS) into an account that pays 8.5% interest per year, compounded annually. Calculate the amount of money that he will have after 3 years.

Compound Interest Formula

$$Amount = \text{Principal}\ \left(1 + \frac{\text{Rate}}{100}\right)^{number\ of\ years}$$

$$Amount = 12{,}000\ \left(1 + \frac{8.5}{100}\right)^{n}$$

Principal = 12,000

Rate = 8.5%

Number of years = 3

$$Amount = 12{,}000\ (1.085)^3 = 15{,}327.47$$

Amount of money after 3 years = 15,327.47 BDS

(3 marks)

Question 5

A man in Guyana invests 15,000 Guyanese Dollars (GYD) into an account that pays 9.5% interest per year, compounded annually. Calculate the amount of money that he will have after 2 years.

Compound Interest Formula

$$Amount = \text{Principal}\ \left(1 + \frac{\text{Rate}}{100}\right)^{number\ of\ years}$$

$$Amount = 15{,}000\ \left(1 + \frac{9.5}{100}\right)^{2}$$

Principal = 15,000

Rate = 9.5%

Number of years = 2

$$Amount = 15{,}000\ (1.095)^2 = 17{,}985.38$$

Amount of money after 2 years = 17,985.38 GYD

(3 marks)

Question 6

A farmer purchases a pickup truck for $280,000. The pickup truck depreciates at a rate of 5% per year. Determine the value of the pickup truck after 4 years?

Depreciation formula

$$Value = Purchase\ Price \left(1 - \frac{\text{Rate}}{100}\right)^{number\ of\ years}$$

$$Value = 280{,}000 \left(1 - \frac{5}{100}\right)^{4}$$

$$Value = 280{,}000\ (0.95)^{4}$$

$$Value = 280{,}000\ (0.81450625)$$

$$Value = \$228{,}061.75$$

Purchase Price = 280,000

Rate = 5%

Number of years =4

Value of pickup truck after 4 years = $228,061.75

(4 marks)

Question 7

The interest rate on savings in a bank decreased from 5 ½ percent per annum to 4 percent per annum. Calculate the difference in annual interest on a deposit of $10,000.

Calculating Simple Interest at 5 ½ %

Simple Interest = $\frac{\text{Principal} \times \text{Rate} \times \text{Time}}{100}$

Simple Interest = $\frac{10{,}000 \times 5.5 \times 1}{100}$ = $550

Calculating Simple Interest at 4 %

Simple Interest = $\frac{\text{Principal} \times \text{Rate} \times \text{Time}}{100}$

Simple Interest = $\frac{10{,}000 \times 4 \times 1}{100}$ = *$400*

Difference in annual interest on deposit = $550 - $400 = **$150**

(4 marks)

END OF WORKSHEET