

CHAPTER TWO

SIMPLE AND COMPOUND INTEREST

Introduction:

*Money deposited or borrowed from a financial institution, such as a bank is referred to as the principal.

*When one borrows from a financial institution and is returning the borrowed amount, he is required to add a certain amount, determined by certain factors such as time and the rate of borrowing to the institution.

*This added amount is known as the interest.

*Also when one makes a deposit at a financial institution, such institutions normally from time to time add certain small amounts to the deposited amount.

*This added amount is also known as interest

Simple interest:

$$S. I. = \frac{P \times R \times T}{100}$$

100

Where P = The principal.

R = The rate.

T = Time in years.

N/B: P. a = Per annum.

(Q1) Find the simple interest on ₦700, for 5 years at a rate of 3% per annum

Soln:

P = ₦ 700, R = 3% and T = 5 years.

$$S.I = \frac{P \times R \times T}{100} = \frac{700 \times 3 \times 5}{100} = \text{¢}105.$$

(Q2) A man borrowed ¢2000 from a bank for 10 years, at a rate of 5% per annum. Calculate

- (i) the simple interest.
- (ii) the amount returned to the bank by the man.

Soln:

(i) $P = \text{¢}2000$, $T = 10$ years and $R = 5\%$.

$$S.I = \frac{P \times R \times T}{100} = \frac{2000 \times 5 \times 10}{100} = \text{¢}1000.$$

(ii) The amount returned to the bank = The principal + the interest = ¢2000 + ¢1000 = ¢3,000.

(Q3) Mr. John took a loan of ¢400 from a bank, for 8 years at a rate of 2% p.a. Determine the amount of money he returned to the bank.

Soln:

$$S.I = \frac{P \times R \times T}{100} = \frac{400 \times 2 \times 8}{100} = \text{¢}64.$$

=> Amount returned to the bank = 400 + 64 = ¢464.

(Q4) Determine the simple interest on ¢9000 for 5 years at $3\frac{1}{3}\%$ per annum.

Soln:

$P = \text{¢}9000$, $T = 5$ years and $R = 3\frac{1}{3}\% = \frac{10}{3}\% = 3.3\%$.

$$S.I = \frac{P \times R \times T}{100} = \frac{9000 \times 3.3 \times 5}{100} = \text{¢}1485.$$

N/B: If the time is given in months, it must be changed into years by dividing by 12.

(Q5) Find the simple interest on ₦400 for 6 months at a rate of 10% p.a.

Soln:

$P = ₦400$, $T = 6\text{months} = 6/12 = 0.5$ years and $R = 10\%$.

$$S.I = \frac{P \times R \times T}{100} = \frac{400 \times 10 \times 0.5}{100} = ₦20.$$

$$\frac{100}{100}$$

(Q6) A man deposited an amount of ₦800 at a bank for 4 months at a rate of $3\frac{1}{4}\%$ per annum. Find the interest he earned.

Soln:

$P = ₦800$, $T = 4\text{months} = 4/12 = 0.33$ years, $R = 3\frac{1}{4}\% = \frac{13}{4}\% = 3.25\%$.

$$S.I = \frac{P \times R \times T}{100} = \frac{800 \times 3.25 \times 0.33}{100} = ₦858.$$

$$\frac{100}{100}$$

(Q7) Kofi earned ₦200 as interest at a bank for depositing a certain amount at the bank for 3months, at a rate of 20% p.a. Determine his deposit.

Soln:

$P = \text{deposit} = ?$, $T = 3\text{months} = 3/12 = 0.25$ years, $R = 20\%$.

$$S.I = \frac{P \times R \times T}{100} = \frac{P \times 20 \times 0.25}{100}$$

$$\frac{100}{100}$$

$$\Rightarrow S.I = \frac{5P}{100}$$

$$\frac{100}{100}$$

Since the interest earned = ₦2000 $\Rightarrow 2000 = \frac{5P}{100}$

$$\Rightarrow 2000 \times 100 = 5P$$

$$\Rightarrow 200000 = 5P$$

$$P = \frac{200000}{5} = 40,000.$$

5

Deposit= ¢40,000.

(Q8) A man gained an interest of ¢20, for depositing a certain amount at a bank for 8 months, at an interest rate of $5\frac{1}{2}\%$ p.a. Find the amount deposited.

Soln:

S.I = ¢20, **P** = ?, **T** = 8months = $\frac{8}{12} = 0.67$ years and **R** = $5\frac{1}{2}\% = 11/2\% = 5.5\%$.

Since **S.I** = $\frac{P \times R \times T}{100}$

100

$$\Rightarrow 20 = \frac{P \times 5.5 \times 0.67}{100}$$

100

$$\therefore 20 \times 100 = 3.7p,$$

$$\Rightarrow 2000 = 3.7p \Rightarrow P = \frac{2000}{3.7} = \text{¢}541.$$

(Q9) An amount of ¢250 was borrowed from a bank, at an interest rate of 20% per annum, for a certain length of time. If the interest paid at the end of this time period was ¢50. Find the time.

Soln:

P = ¢250, **R** = 20%, **S.I** = ¢50, **T** = ?

But since **S.I** = $\frac{P \times R \times T}{100}$

100

$$\Rightarrow 50 = \frac{250 \times 20 \times T}{100}$$

$$100$$

$$\Rightarrow 50 \times 100 = 5000T, \Rightarrow 5000 = 5000T.$$

$$\therefore T = \frac{5000}{5000} = 1, \Rightarrow T = 1 \text{ year.}$$

(Q10) Kofi borrowed an amount of ₵4000, at a rate of 10% per annum from a bank. At the end of this time period, he had to pay an amount of ₵6000 to the bank. Find this time.

Soln:

$$P = \text{₵}4000, R = 10\% \text{ and } T = ?.$$

$$\text{Amount returned to the bank} = \text{₵}6000.$$

$$\text{Interest} = \text{Amount returned} - \text{the principal} = \text{₵}6000 - \text{₵}4000 = \text{₵}2000.$$

$$\text{Since } S.I = \frac{P \times R \times T}{100}$$

$$100$$

$$\Rightarrow 2000 = \frac{4000 \times 10 \times T}{100}$$

$$100$$

$$\Rightarrow 2000 = 400T \Rightarrow T = \frac{2000}{400}, \Rightarrow T = 5 \text{ years.}$$

(Q11) John borrowed an amount of ₵600 at a rate of $12\frac{1}{2}\%$ per annum, for a certain length of time. At the end of this time period he had to pay ₵630. Find the time.

Soln:

$$P = \text{₵}600, R = 12\frac{1}{2}\% = 12.5\% \text{ and } T = ?.$$

$$S.I = 630 - 600 = \text{₵}30.$$

$$\text{Since } S.I = \frac{P \times R \times T}{100}$$

$$100$$

$$\Rightarrow 30 = \frac{600 \times 12.5 \times T}{100}$$

$$100$$

$$\Rightarrow 30 = \frac{7500T}{100} \Rightarrow 30 \times 100 = 7500T$$

$$100$$

$$\Rightarrow T = \frac{3000}{7500} = 0.4 \text{ years.}$$

$$7500$$

(Q12) An amount of ₦400 deposited at a bank became ₦480, during a time period of 6 months. Determine the rate.

Soln:

$$\text{S.I} = 480 - 400 = ₦80.$$

$$P = ₦400, T = 6 \text{ months} = 6/12 = 0.5 \text{ years and S.I} = ₦80.$$

$$\text{Since S.I} = \frac{P \times R \times T}{100}$$

$$100$$

$$\Rightarrow 80 = \frac{400 \times R \times 0.5}{100}$$

$$100$$

$$\Rightarrow 80 = 2R \Rightarrow R = 80/2 = 40, \Rightarrow R = 40\%.$$

(Q13) An amount of ₦6000 deposited at a financial institution, became ₦7000. If the rate was $5\frac{1}{3}\%$ per annum, find the time.

Soln:

$$\text{Interest} = 7000 - 6000 = ₦1000.$$

$$R = 5\frac{1}{3}\% = 19/3\% = 6.3\%, T = ?, P = ₦6000 \text{ and S.I} = ₦1000.$$

$$S.I = \frac{P \times R \times T}{100}$$

$$100$$

$$\Rightarrow 1000 = \frac{6000 \times 6.3 \times T}{100}$$

$$100$$

$$\Rightarrow 1000 \times 100 = 37800T,$$

$$\Rightarrow 100000 = 37800T,$$

$$\Rightarrow T = \frac{100000}{37800} = 2.6,$$

$$37800$$

$$\Rightarrow T = 2.6 \text{ years.}$$

(Q14) Mr. Addo deposited ¢9000 at a bank, at $3\frac{2}{5}\%$ p.a for 8 months. At the end of the 8 months, he withdrew the whole amount together with the interest and gave it as a loan to Mr. Badu, who in turn deposited it at a bank for 2 years at an interest rate of 7% per annum.

- (i) Calculate the amount given to Mr. Badu by the bank at the end of the 2 year time period.
- (ii) If Mr. Badu returned Mr. Addo's money together with half of the interest he gained, how much did he give to Mr. Addo?

Soln:

$$P = \text{¢}9000, R = 3\frac{2}{5}\%, = \frac{17}{5}\% = 3.4\%, T = 8 \text{ months} = \frac{8}{12} = 0.67 \text{ years and } S.I = ?.$$

$$\text{Interest gained} = \frac{P \times R \times T}{100}$$

$$100$$

$$= \frac{9000 \times 3.4 \times 0.67}{100} = \text{¢}214.$$

100

=>The interest earned on the ₵9000 by Mr.Addo = ₵214.

Amount given to Mr. Badu by Mr. Addo = the principal + the interest = 9000 + 214 = ₵9214.

Mr. Badu deposited this amount at a bank for 2 years at 7% per annum simple interest. The interest gained by Mr. Badu = $\frac{P \times R \times T}{100} = \frac{9214 \times 2 \times 7}{100} = ₵1288$.

Amount given to Mr. Badu by the bank at the end of the 2 years period = 9214 + 1288 = ₵10502.

(ii) Amount given by Mr. Badu to Mr.Addo = amount given to him by Mr. Badu + half the interest gained = 9214 + $\frac{1288}{2}$ = 9214 + 644 = ₵9858.

(Q15) Kofi bought a car for ₵2500. Since he did not have the whole amount he first paid ₵1500. For the rest, he took a loan at 20% p.a.

- (i) If he was able to repay the loan after 5 years, how much interest did he pay?
- (ii) Calculate the percentage increase in the cost of the car as a result of the loan.

Soln:

Cost of car = ₵2500.

Amount paid by Kofi = ₵1500.

=>Loan taken by Kofi = 2500 — 1500 = ₵1000.

To get this ₵1000, he took a loan at 20% per annum and repaid it in 5 years.

P = 1000, T = 5 years, R = 20%.

Interest paid on loan = $\frac{P \times R \times T}{100} = \frac{1000 \times 5 \times 20}{100} = ₵1000$.

(ii) Actual cost = cost of the car + interest paid due to the loan = ₦2500 + ₦1000 = ₦3500.

(ii) Increase in cost = 3500 — 2500 = ₦1000.

% increase = $\frac{\text{increase in cost}}{\text{Original cost}} \times 100$

Original cost

= $\frac{1000}{2500} \times 100 = 40\%$.

2500

(Q16) Mr. John took a loan of ₦3500 from a bank at a rate of $2\frac{1}{3}\%$ per annum. If he was able to repay the loan after a time period of 2 years 4 months, determine the amount he paid to the bank.

Soln:

P = ₦3500, R = $2\frac{1}{3}\% = 7/3\% = 2.3\%$, T = 2 years 4 month.

Since 4 months = $4/12 = 0.33$ years $\Rightarrow T = 2 + 0.33 = 2.33$ yrs.

S.I = $\frac{P \times R \times T}{100}$ = $\frac{3500 \times 2.3 \times 2.33}{100}$ = ₦188.

100

100

Amount paid to the bank = Principal + Interest = 3500 + 188 = ₦3688

(Q17) A man borrowed a sum of money from a bank at an interest rate of 12%. After a year, he paid ₦896,000 to settle the loan and the interest. How much did he borrow from the bank?

Soln:

Let x = the amount borrowed from the bank, or the principal.

R = 12%, P = x and T = 1 year

S.I = $\frac{P \times R \times T}{100}$ = $\frac{x \times 12 \times 1}{100}$ = 0.12x,

$$100 \quad 100$$

=> Amount which must be returned to the bank to settle the loan and the interest = the principal + the interest = $x + 0.12x = 1x + 0.12x = 1.12x$.

Since the amount returned to the bank by the man to settle the loan and the interest = ¢896,000 => $1.12x = 896,000$, => $x = \frac{896,000}{1.12} = \text{¢}800,000$.

Amount borrowed = $x = \text{¢}800,000$.

(Q18) Mr. Bawa deposited an amount at the bank, at a rate of $5\frac{1}{2}\%$ per annum for a time period of 3 years 8 months, and earned an interest of ¢81. He later withdrew the amount deposited, doubled it and added ¢2000 to purchase a car. Determine the cost of the car.

Soln:

S.I = ¢81, $R = 5\frac{1}{2}\% = 11\frac{1}{2}\% = 5.5\%$, $T = 3$ years 8 months and since 8 months = 0.66 years, then $T = 3 + 0.66 = 3.66$ years. Amount deposited = the principal = ?

Since **S.I** = $P \times R \times T$

$$100$$

$$\Rightarrow 81 = \frac{P \times 5.5 \times 3.66}{100},$$

$$100$$

$$\Rightarrow 81 = \frac{20.1 P}{100},$$

$$100$$

$$\Rightarrow 81 \times 100 = 20.1 P,$$

$$\Rightarrow P = \frac{81 \times 100}{20.1} = 402.$$

$$20.1$$

The amount deposited at bank = ¢402.

Since in order to purchase the car, he doubled this amount and added an amount of ¢2000. Then the cost of the car = $(2 \times 402) + 2000 = 804 + 2000 = \text{¢}2804$.

COMPOUND INTEREST AND ITS ASSOCIATES:

(Q1) Calculate the compound interest on ¢300 for 3 years at 4% interest rate per annum.

Soln:

For the first year:

Initial amount = ¢300.

Interest rate = 4%.

Interest gained = ¢4% of 300 = $\frac{4}{100} \times 300 = \text{¢}12$.

=>The value of the amount at the end of the first year (or the beginning of the second year) = $300 + 12 = \text{¢}312$.

For the second year:

Initial amount = ¢312.

Interest rate = 4%.

Interest gained = $\frac{4}{100} \times 312 = \text{¢}12.5$.

=>the value of the amount at the end of the second year (or the beginning of the third year) = $\text{¢}312 + \text{¢}12.5 = \text{¢}324.5$.

For the third year:

Initial amount = ¢324.5.

Interest rate = 4%.

Interest gained = $4 \times 324.5 = \underline{1298} = \text{¢}12.98$.

100

100

Compound interest for the three years = interest gained for the first year + interest gained for the second years + interest gained for the third year = 12 + 12.5 + 12.98 = ¢37.48

(Q2) An amount of ¢400 was deposited in January at a bank for two years at a rate of 5% every six month.

(a) Determine the compound interest attracted by the amount at the end of the second year.

(b) Find also the value of the amount at the end of the second year.

Soln:

For the first six months of year one i.e. from January to June ending:

Initial amount = ¢400.

Rate = 5%.

Interest gained = $\frac{5}{100} \times 400 = \text{¢}20$.

=>Value of the amount at the end of the first six month = 400 + 20 = ¢420.

For the next six months of year one i.e. from July to December ending:

Initial amount = ¢420.

Rate = 5%.

Interest gained = $\frac{5}{100} \times 420 = \text{¢}21$.

100

=> Value of the amount at the end of the first year (or the beginning of the second year) = 420 + 21 = ¢441.

For the first six months of the second year i.e. from January to June ending:

Initial amount = ₦441.

Rate = 5%.

Interest gained = $\frac{5}{100} \times 441 = ₦22$.

100

=> The value of the amount at the end of June ending = $441 + 22 = ₦463$.

For the next six months of the second year i.e. from July to December ending:

Initial amount = ₦463.

Rate = 5%

Interest gained = $\frac{5}{100} \times 463 = ₦23$.

100

=> Value of the amount at the end of the second year = $463 + 23 = ₦486$.

The compound interest = $20 + 21 + 22 + 23 = ₦86$

(Q3) Mr. Kuma Koranteng deposited ₦800 at a bank. During the first year the interest rate was 20%, but this rate went up to 30% during the second year. Find the value of his amount at the end of the second year.

Soln:

For the first year:

Initial deposit = ₦800.

Rate = 20%.

Interest gained = 20% of ₦800 = $\frac{20}{100} \times 800 = ₦160$.

100

=> Value of the deposit at the end of the first year = $800 + 160 = ₦960$.

For the second year:

Value of deposit = ₦960.

Rate = 30%.

Interest earned = 30% of 960 = $\frac{30}{100} \times 960 = ₦288$.

100

=> Value of the deposit at the end of the second year = ₦960 + ₦288 = ₦1248.

(Q4) The price of a pen is ₦300. If this price increases by 10% every year, find the price at the end of the third year.

Soln:

For the first year:

Price of the pen = ₦300.

Percentage increase = 10%.

=> Increase in price = 10% of 300 = ₦30..

=> The price of the pen at the end of the first year = ₦300 + ₦30 = ₦330.

For the second year

Price of pen = ₦330

Percentage increase = 10%

=> Increase in price = 10% of 330 = $\frac{10}{100} \times 330 = ₦33$.

100

=> The price of the pen at the end of the second year = ₦330 + ₦33 = ₦363.

For the third year:

Price of the pen = ¢363.

Percentage increase = 10%.

=> Increase in price = 10% of 363 = $\frac{10}{100} \times 363 = \text{¢}36.3$.

100

=> Price of the pen at the end of the third year = ¢363 + 36.3 = ¢399.

(Q5) The cost price of a book was ¢400. During the first year, its price went up by 5% but during the second year, it went up by 20%. Finally during the third year, the price went up by 10%. What was the price at the end of the third year?

Soln:

Year 1:

Price of book = ¢400.

Percentage increase = 5%.

=> Increase in price = $\frac{5}{100} \times 400 = \text{¢}20$.

100

=> The price of the book at the end of the first year = ¢400 + ¢20 = ¢420.

Year 2:

Price of the book = ¢420.

Percentage increase = 20%.

=> Increase in price = 20% of 420 = $\frac{20}{100} \times 420 = \text{¢}84$.

=> The price of the book at the end of the second year = ¢420 + ¢84 = ¢504

Year 3:

Price of the book = ¢504.

Percentage increase = 10%.

=> Increase = 10% of 504 = $\frac{10}{100} \times 504 = \text{¢}50.4$.

100

The price of the book at the end of the third year = ¢504 + ¢50.4 = ¢554.4.

(Q6) At the beginning of the year the cost price of a shirt was ¢600. If this increases by 20% every four (4) months, what will be the cost of the shirt at the end of the year.

Soln:

For the first four months i.e. from January to April ending:

Price of the shirt = ¢600.

Percentage increase = 20%.

=> Increase in price = $\frac{20}{100} \times 600 = 120$.

=> The price of the shirt at April ending = 600 + 120 = ¢720.

For the next four months i.e. from May to August ending:

Price of shirt = ¢720.

Percentage increase = 20%.

=> Increase = $\frac{20}{100} \times 720 = \text{¢}144$.

=> Price of the shirt at August ending = ¢720 + ¢144 = ¢864.

First the last four months i.e. from September to December:

Price of shirt = ¢864.

Percentage increase = 20%.

$$\Rightarrow \text{Increase} = \frac{20}{100} \times 864 = \text{¢}173.$$

$$100$$

$$\Rightarrow \text{Price of the short at the end of the year} = 864 + 173 = \text{¢}1037.$$

(Q7) A book cost ¢800 and its price increased every six months. During the first year it increased by 10% every six months, and during the second year, it increased by 20% every six month. Determine the book's price at the end of the second year.

Soln:

For the first six months of year One i.e. from January to July ending:

$$\text{Price of book} = \text{¢}800$$

$$\text{Percentage increase} = 10\%$$

$$\Rightarrow \text{Increase in price} = \frac{10}{100} \times 800 = \text{¢}80$$

$$100$$

$$\Rightarrow \text{The price of the book at June ending} = 800 + 80 = \text{¢}880.$$

For the last six months of year one i.e. from July to December ending:

$$\text{Price of book} = \text{¢}880.$$

$$\text{Percentage increase} = 10\%.$$

$$\Rightarrow \text{Increase in price} = \frac{10}{100} \times 880 = \text{¢}88.$$

$$\Rightarrow \text{Price of the book at the end of the year} = \text{¢}880 + \text{¢}88 = \text{¢}968.$$

For the first six month of year two i.e. from January to June

$$\text{Price of book} = \text{¢}968.$$

$$\text{Percentage increase} = 20\%.$$

$$\Rightarrow \text{Increase} = \frac{20}{100} \times 968 = \text{¢}194.$$

$$\Rightarrow \text{Price of the book at the ending of June} = 968 + 194 = \text{¢}1162$$

For the last six months of the second year i.e. from July to December ending:

Price of the book = ¢1162.

Percentage increase = 20%

$$\Rightarrow \text{Increase in price} = \frac{20}{100} \times 1162 = \text{¢}232.$$

$$\Rightarrow \text{The price of the book at the end of the second year} = \text{¢}1162 + \text{¢}232 = \text{¢}1394.$$

N/B: Depreciation is the term which can be used to refer to the decrease in the cost or the price of an item.

(Q8) A car is priced at ¢2200. If its price depreciates by 30% annually, determine the price at the end of the second year.

Soln:

For year one:

Price of car = ¢2200.

Depreciation = 30%.

$$\Rightarrow \text{Decrease in car price} = \frac{30}{100} \times 2200 = \text{¢}660.$$

$$\Rightarrow \text{Price of the car at the ends of the first year} = \text{¢}2200 - \text{¢}660 = \text{¢}1540.$$

For the second year:

Price of car = ¢1540.

Depreciation = 30%.

$$\text{Decrease in the price of the car} = \frac{30}{100} \times 1540 = \text{¢}462.$$

=> Price of the car at the end of the second year = ₦1540.- ₦462 = ₦1078.

(Q9) The price of a building is estimated to be ₦4800. During the first year, the price depreciated by 10% and by 20% during the second year. For the third year the depreciation was 5%. Determine the price of the building at the end of the third year.

Soln:

For the first year:

Price of the building = ₦4800.

Depreciation = 10%.

=> Decrease in price of the building = $\frac{10}{100} \times 4800 = ₦480$.

=> The price of the building at the end of the first year = ₦4800 — ₦480 = ₦4320

For the second year:

Price of building = ₦4320.

Depreciation = 20%.

Decrease in the price of the building = $\frac{20}{100} \times 4320 = ₦864$.

=> Price of the building at the end of the second year = ₦4320 — ₦864 = ₦3456.

For the third year:

Price of the building = ₦3456.

Depreciation = 5%.

Depreciation or decrease in price = 5% of 3456 = $\frac{5}{100} \times 3456 = ₦175$.

=> The price of the building at the end of the third year = ₦3456 — ₦175 = ₦3281.

QUESTIONS

(Q1) Find the simple interest earned, if ₦2000 was deposited at a bank for 3 years, at a rate of 25% per annum.

Ans: ₦1500

(Q2) John took a loan of ₦450 from a bank for a period of 8 months at a rate of 3% per annum.

(a) How much interest did he pay?

Ans: ₦9

(b) Find the total amount he paid to the bank.

Ans: ₦459

(Q3) How much interest will I earn, if I deposit an amount of ₦4500 at a bank for 2 months at an interest rate of $3\frac{1}{3}\%$ per annum?

Ans: ₦25
(Q4) Elias deposited a certain amount at the bank for a period of 1 year 3 months, at a rate of $4\frac{1}{2}\%$ per annum. If the interest he had was ₦51, determine the amount deposited.

Ans: ₦900

(Q4) Madam Abiba Hawa took a loan of ₦250 from a bank at a rate of 27% per annum. If in the end she had to pay an amount of ₦480 to the bank, determine the time she took to repay the loan.

Ans: 3.4 yrs

(Q5) Kofi Mensah was given an amount of ₦900 by his father. He deposited one third of this amount at a bank for 6 months at a rate of 2% per annum. At the end of the 6 months period, he withdrew the amount deposited together with the interest gained. If he used half of this to buy a computer, find the price of this computer

Ans: ₦152

(Q6) Kojo was given ₦900 by his dad. He deposited one third of this amount at a bank for 6 months at a rate of $2\frac{1}{2}\%$ per annum. Calculate the interest he earned.

Ans: ₦3.75

(Q7) An amount of ₦400 deposited by Jonny at a bank, at a certain rate became ₦480 within a 6 month period. If he had deposited the same amount at another bank, whose rate was twice that of the first one for the same period of time, how much interest would he have earned.

Ans: ₦160

(Q8) Mr. Amissah shared an amount of ₦1200 between his two sons John and Abu in the ratio 3:1 respectively. John deposited half of the amount he had at a bank for 2 year. If his amount deposited had become ₦500, what was the rate.

Ans: 5.6%

(Q9) A car is priced at ₦2200. If its price increases by 25% annually, determine its price at the end of the third year.

Ans: ₦4298

(Q10) The initial population of a school was 500 pupils. For the first year, this increased by 20% and for the second year it went up by 15%. Determine the school's population at the end of the second year.

Ans: 690 pupils

(Q11) A house is valued at ₦300 million. If its value depreciates by 15% every year, determine its value at the end of the third year.

Ans: ₦184 million.

(Q12) At the beginning of the year, the salary of Musah was ₦480. If this increases by 20% every four months, what will be his salary at the end of the year?

Ans: ¢829

(Q13) A book is priced at ¢800. If its price depreciates by 28% every six months, determine the price at the end of the second year.

Ans: ¢215