

Worksheet 2015-8TH-00001(1)

(1) (1) Calculate the following if SP → selling price and cost price → CP:

(a) SP if the CP = R140 with a loss of 20%.

$$\text{Loss} = 20\% \text{ of } R140$$

$$= \frac{20}{100} \times \frac{140}{1}$$

$$= 2 \times 14$$

$$= R28$$

$$\therefore SP = CP - \text{loss} = R140 - R28$$
$$= R112$$

(b) SP if the CP = R800 with a profit of 25%.

$$\text{Profit} = 25\% \text{ of } R800$$

$$= \frac{25}{100} \times \frac{800}{1}$$

$$= 25 \times 8$$

$$= R200$$

$$\therefore SP = CP + \text{profit} = R800 + R200$$
$$= R1,000$$

(c) Profit if SP = R3 450 and CP = R2 950.

$$\text{Profit} = SP - CP$$

$$= R3\,450 - R2\,950$$

$$\therefore \text{Profit} = R500$$

(d) Loss percentage if CP = R400 and loss = R40.

$$\text{Loss \%} = \frac{\text{Loss}}{CP} \times 100$$

$$= \frac{R40}{R400} \times \frac{100}{1}$$

$$= \frac{R40}{4}$$

$$= 10\%$$

(2) If the exchange rate is \$1 = R7,28, calculate:

(a) how many rand \$16 will be.

$$\begin{aligned} \$16 &= 16 \times R7,28 \\ &= R116,48 \end{aligned}$$

(b) how many rand \$3 232 will be.

$$\begin{aligned} \$3\,232 &= 3\,232 \times R7,28 \\ &= R23\,528,96 \end{aligned}$$

(c) how many dollar R34 will be.

$$\begin{aligned} R34 &= \frac{R34}{7,28} \\ &= \$4,67 \end{aligned}$$

(d) how many dollar R1 456 will be.

$$\begin{aligned} R1\,456 &= \frac{1\,456}{7,28} \\ &= \$200 \end{aligned}$$

(3) (a) Calculate the simple interest if R367 is invested for three years at 12% p.a.

(b) Calculate the number of years (to the nearest year) you should invest R3 000 to earn a total return of R3 600 with an interest rate of 11,2% p.a, simple interest.

$$\begin{aligned} (a) \quad I &= \frac{Crt}{100} \\ &= \frac{R367 \times 12 \times 3}{100} \\ &= R132,12 \end{aligned}$$

$$\begin{aligned} \text{or} \quad A &= P(1 + i \cdot n) \\ &= 367 \left(1 + \frac{12}{100} \times 3\right) \\ &= R499,12 \end{aligned}$$

$$\begin{aligned} \therefore \text{Interest} &= A - P \\ &= R499,12 - R367 \\ &= R132,12 \end{aligned}$$

$$(b) \quad A = R3\,600$$

$$P = R3\,000$$

$$i = 11,2\% \text{ p.a.} = 0,112$$

$$n = ?$$

$$A = P(1 + i \cdot n)$$

$$\begin{aligned} 3\,600 &= 3\,000 (1 + 0,112 \times n) \\ \frac{3\,600}{3\,000} &= 1 + 0,112n \end{aligned}$$

$$1,2 - 1 = 0,112n$$

$$0,2 = 0,112n$$

$$\therefore n = \frac{0,2}{0,112} = 1,785...$$

$$\therefore n \approx 2 \text{ year}$$

- (4) The Steyn family buys a new lounge suite on hire purchase. The cost of the lounge suite is R28 000. According to the hire purchase contract, the total amount should be repaid within three years at 16% per year. Calculate the accumulated amount that the Steyn family has to repay over the three years. Calculate the monthly instalment.

$$\begin{aligned}
 A &= ? & A &= P(1 + i \cdot n) \\
 P &= R28\,000 & &= 28\,000(1 + 0,16 \times 3) \\
 i &= 16\% = 0,16 & &= 28\,000(1,48) \\
 n &= 3 & A &= 41\,440
 \end{aligned}$$

$\therefore$ Monthly instalment

$$= \frac{41\,440}{36}$$

$$= R1\,151,11$$

(3 years $\times$ 12 = 36 months)

- (5) A pair of shoes is reduced 25% on a sale. The original selling price of the shoes was R192. If the cost price of the shoes was R120, calculate the profit percentage on the reduced price.

25% of R192

$$= \frac{25}{100} \times \frac{R192}{1}$$

$$= \frac{R192}{4}$$

$$= R48$$

$$\text{Reduced price} = R192 - R48 = R144$$

$$\therefore \text{Profit} = R144 - R120 = R24$$

$$\begin{aligned}
 \therefore \text{Profit \%} &= \frac{24}{120} \times 100 \\
 &= 20\%
 \end{aligned}$$

- (6) A student plan to tour Europe. He saved R8 000 for spending money. He decides to exchange 30% of his savings for British pounds and the remainder for euro. Calculate the amount of pounds and euro he will receive if the exchange rate is as follow:
€1 = R7,56 and £1 = R10,55

$$\begin{aligned} & 30\% \text{ of } R8000 \\ &= \frac{30}{100} \times 8000 \\ &= 30 \times 80 \\ &= R2400 \rightarrow \text{pound} : R2400 \div R10,55 \\ &= \text{£ } 227,49 \end{aligned}$$

$$\begin{aligned} \text{Euro's} : R8000 - R2400 \\ &= R5600 \end{aligned}$$

$$\begin{aligned} \therefore \text{Euro's} &= R5600 \div R7,56 \\ &= \text{€ } 740,74 \end{aligned}$$