

Worksheet 2015-8EG-00001(1)

(1) Divide 120 in the ratio 2 : 3.

$$2 + 3 = 5$$

$$\frac{2}{5} \times \frac{120}{1} = 2 \times 24 = 48$$

$$\frac{3}{5} \times \frac{120}{1} = 3 \times 24 = 72$$

(2) Determine the ratio of each of the following in simplest form:

(a) 55c and R2,20

(b) 14 km and 84 km

$$\frac{55^c}{R2,20}$$

$$= \frac{55^c}{220^c} \div \frac{55}{55}$$

$$= \frac{1}{4} = 1:4$$

$$\frac{14 \text{ km}}{84 \text{ km}}$$

$$= \frac{14}{84} \div \frac{14}{14}$$

$$= \frac{1}{6} = 1:6$$

(3) If 3 kg cheese cost R162,75, calculate the price of:

(a) 1 kg cheese

(b) 5 kg cheese

$$\frac{3 \text{ kg}}{3} = \frac{R162,75}{3}$$

$$\therefore 1 \text{ kg} = R54,25$$

$$5 \text{ kg} \times R54,25$$

$$= R271,25$$

(4) Reduce 75 with 20%.

$$20\% \text{ of } 75$$

$$= \frac{20}{100} \times \frac{75}{1}$$

$$= \frac{15}{1}$$

$$= 15 \quad \therefore 75 - 15 = 60$$

$$100\% - 20\%$$

↑

$$80\% \text{ of } 75$$

$$= \frac{80}{100} \times \frac{75}{1}$$

$$= \frac{300}{1}$$

$$= 60$$

- (5) Jan's salary increases annually with 8%. If he currently earns a salary of R140 000 per year, calculate Jan's annual salary in two years' time.

$$\begin{aligned} \text{1st year: } & \left(\begin{array}{l} 100\% + 8\% \\ 108\% \end{array} \right) \text{ of } R140\,000 \\ & = \frac{108}{100} \times \frac{140\,000}{1} = 108 \times 1400 = R151\,200 \end{aligned}$$

$$\begin{aligned} \text{2 year: } & 108\% \text{ of } R151\,200 \\ & = \frac{108}{100} \times \frac{151\,200}{1} = 108 \times 1512 = R163\,296 \end{aligned}$$

- (6) Calculate 75% of R3 450 124.

$$\begin{aligned} & 75\% \text{ of } R3\,450\,124 \\ & = \frac{3\,75}{100} \times \frac{R3\,450\,124}{1} = 862\,531 \\ & = 3 \times R862\,531 \\ & = R2\,587\,593 \end{aligned}$$

- (7) Determine x if each of the following ratios are in the same proportion:

$$\begin{aligned} \text{(a)} \quad \frac{x}{5} &= \frac{3}{5} \quad \text{Denominators same} \Rightarrow \text{Same numerators} \quad \therefore x = 3 \\ \text{(b)} \quad \frac{3}{x} &= \frac{3}{7} \quad \text{Same numerators} \Rightarrow \text{Same denominators} \quad \therefore x = 7 \end{aligned}$$

$$\text{(c)} \quad \frac{x}{2} = \frac{3}{4}$$

$$\frac{x}{2} \times \frac{2}{2} = \frac{3}{4}$$

$$\frac{2x}{4} = \frac{3}{4}$$

$$2x = 3$$

$$x = \frac{3}{2}$$

$$\text{(d)} \quad \frac{2}{3} = \frac{x}{2}$$

$$\frac{2}{3} \times \frac{2}{2} = \frac{x}{2} \times \frac{3}{3}$$

$$\frac{4}{6} = \frac{3x}{6}$$

$$\therefore 4 = 3x$$

$$\therefore x = \frac{4}{3}$$