

Mathematics

Ex 11 (A)

1. a) i) $4:6 \rightarrow \frac{4}{6} \rightarrow 2:3$

ii) $48:54 \rightarrow \frac{48}{54} \rightarrow \frac{8}{9}$

ii) $200:250 \rightarrow \frac{200}{250} \rightarrow 4:5$

b) i) $5\text{kg} : 800\text{gm} \rightarrow [5\text{kg} = 5000\text{gm}]$

$= \frac{25 \cancel{5000}\text{gm}}{4 \cancel{800}\text{gm}} \rightarrow 25:4$

ii) $30\text{cm} : 2\text{m} [2\text{m} = 200\text{cm}]$

$= \frac{3 \cancel{15} \cancel{30}\text{cm}}{2 \cancel{100} \cancel{200}\text{cm}} \rightarrow 3:20$

iii) $3\text{m} : 90\text{cm} [3\text{m} = 300\text{cm}]$

$= \frac{10 \cancel{50} \cancel{300}\text{cm}}{3 \cancel{15} \cancel{45} \cancel{90}\text{cm}} \rightarrow 10:3$

iv) 2 yrs : 3 months [2 years = 24 months]

$$\frac{\cancel{24} \text{ months}}{\cancel{3} \text{ months}} \rightarrow 8:3$$

v) 1 hr : 45 mins [1 hr = 60 mins]

$$\frac{\cancel{60} \text{ mins}}{\cancel{45} \text{ mins}} \rightarrow 4:3$$

vi) 4 mins : 45 secs [4 mins = 240 secs]

$$\frac{\cancel{240} \text{ secs}}{\cancel{45} \text{ secs}} \rightarrow 16:3$$

c) i) $1\frac{1}{2} : 2\frac{1}{2}$ [$1\frac{1}{2} = \frac{3}{2}$]

$$\frac{3}{2} : \frac{5}{2}$$

[$2\frac{1}{2} = \frac{5}{2}$]

$$\Rightarrow \frac{\cancel{2}}{\cancel{2}} \times \frac{3}{5} \rightarrow 3:5$$

$$\text{ii) } 30\text{cm} : 3\frac{1}{2} : 7 \quad \left[3\frac{1}{2} = \frac{7}{2} \right]$$

$$\Rightarrow \frac{7}{2} : 7$$

$$\Rightarrow \frac{7}{2} : \frac{7}{1}$$

$$\Rightarrow \frac{\cancel{7}}{2} \times \frac{1}{\cancel{7}} \rightarrow 1 : 2$$

$$\text{iii) } 2\frac{1}{3} : 3\frac{1}{2} : 1\frac{1}{4} \quad \left[2\frac{1}{3} = \frac{7}{3} \right]$$

$$\Rightarrow \frac{7}{3} : \frac{7}{2} : \frac{5}{4} \quad (\text{LCM} = 12) \quad \left[3\frac{1}{2} = \frac{7}{2} \right]$$

$$\left[1\frac{1}{4} = \frac{5}{4} \right]$$

$$\Rightarrow \frac{7 \times 4}{3 \times 4} : \frac{7 \times 6}{2 \times 6} : \frac{5 \times 3}{4 \times 3}$$

$$\Rightarrow \frac{28}{12} : \frac{42}{12} : \frac{15}{12}$$

$$= \frac{7 \times 12^4}{3} : \frac{7 \times 12^6}{2} : \frac{5 \times 12^3}{4} = 28 : 42 : 15$$

$$iv) x^2 : 4x$$

$$\Rightarrow \frac{x^2}{4x} \Rightarrow \frac{x \times x}{4 \times \cancel{x}}$$

$$\Rightarrow \frac{x}{4} \rightarrow x:4$$

$$v) 2.5 : 1.5$$

$$\Rightarrow \begin{array}{r} 5 \cancel{2.50} \\ 3 \cancel{1.50} \end{array}$$

$$\rightarrow 5:3$$

117

2

5

5

~~2/5-8~~ 1 = 1:2

~~8 x 10~~ 2

2. 60 : 80

3. i) False

ii) True

iii) True

i) $\frac{\cancel{2}7}{\cancel{2}7} \frac{9}{7} \left\{ \because \text{Not Equivalent} \right\}$

4.

ii) $\frac{240}{102} = \frac{120}{51} = \frac{40}{17} = \frac{15}{5} = \frac{3}{1}$ } \therefore Equivalent

iii) [3 kg = 3000 gm]

$\rightarrow \frac{1}{5} \frac{2500}{3000}$ gm

Hence, Divisible Equivalent

4. \rightarrow Yes, because:

$\frac{15 \text{ kg}}{35 \text{ kg}} = \frac{3}{7}$

$\frac{6 \text{ yrs}}{14 \text{ yrs}} = \frac{3}{7}$

Hence, the ratio of 15 kg and 35 kg and 6 yrs and 14 yrs is same.

5. Yes, because:

$\frac{2 \text{ g}}{5 \text{ g}} = \frac{6}{15}$

$\frac{2 \text{ cm}}{5 \text{ cm}} = \frac{6}{15} = \frac{18}{45} = \frac{36}{90}$

Hence the ratio of 6g and 15g is same as the ratio of 36cm and 90cm.

$$\begin{aligned} 6. \quad 3.5\text{m} & : 475\text{ cm} & \text{or} & : 2.8\text{m} \\ \Rightarrow 7 \quad 350\text{ cm} & : 475\text{ cm} & & : 280\text{ cm} \\ & 70 & ; & 95 & ; & 56 \end{aligned}$$

$$\begin{aligned} 7. \quad 5 \text{ dozen} & = 60 \text{ items} \\ 2 \text{ scores} & = 40 \end{aligned}$$

Ratio $\rightarrow 60:40$