

EXERCISE - 11(A)

$$\begin{aligned} \textcircled{1} \text{ a) i) } 4:6 &= \frac{4}{6} \\ &= \frac{2}{3} \\ &= 2:3 \text{ (Ans)} \end{aligned}$$

$$\begin{aligned} \text{ii) } 48:54 &= \frac{48}{54} \\ &= \frac{8}{9} \\ &= 8:9 \text{ (Ans)} \end{aligned}$$

$$\begin{aligned} \text{iii) } 200:250 &= \frac{200}{250} \\ &= \frac{4}{5} \\ &= 4:5 \text{ (Ans)} \end{aligned}$$

$$\text{b) i) } 5 \text{ kg} : 800 \text{ gm}$$

$$\begin{aligned} 5 \text{ kg} &= (5 \times 1000) \text{ gm} \\ &= 5000 \text{ gm} \end{aligned}$$

$$\begin{aligned} \text{Ratio} &= \frac{5000}{800} \\ &= \frac{25}{4} \\ &= 25:4 \text{ (Ans)} \end{aligned}$$

ii) 30 cm : 2m

$$2m = (2 \times 100) \text{ cm}$$

$$= 200 \text{ cm}$$

$$\text{Ratio} = \frac{30}{200}$$

$$= \frac{3}{20}$$

$$= 3 : 20 \text{ (Ans)}$$

iii) 3m : 90 cm

$$3m = (3 \times 100) \text{ cm}$$

$$= 300 \text{ cm}$$

$$3m : 90 \text{ cm}$$

$$= 300 \text{ cm} : 90 \text{ cm}$$

$$= \frac{300}{90} \times \frac{10}{3}$$

$$= \frac{10}{3}$$

$$= 10 : 3 \text{ (Ans)}$$

iv) 2 years : 9 months.

$$2 \text{ years} = (2 \times 12) \text{ months}$$

$$= 24 \text{ months}$$

$$2 \text{ years} : 9 \text{ months}$$

$$= 24 \text{ months} : 9 \text{ months}$$

$$= \frac{24}{9} \times \frac{3}{3} = \frac{8}{3} = 8 : 3 \text{ (Ans)}$$

ex)  $1\frac{1}{2} : 2\frac{1}{2}$

$$1\frac{1}{2} = \frac{3}{2}$$

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

$$\text{Ratio} = \frac{3}{2} : \frac{5}{2}$$

$$= \frac{3}{2} \times \frac{2}{5}$$

$$= \frac{3}{5}$$

$$= 3 : 5 \text{ (Ans)}$$

iv)  $x^2 : 4x$

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

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

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

$$= x : 4 \text{ (Ans)}$$

v)  $2.5 : 1.5$

~~$$= \frac{2.5}{1.5}$$~~

$$= \frac{2.5}{1.5}$$

$$= \frac{25}{15}$$

$$= 5 : 3 \text{ (Ans)}$$

vi) 2.5 : 5

$$\frac{2.5}{5} = \frac{250}{500}$$

$$= 250$$

$$= 50 : 1 \text{ (Ans)}$$

vii)  $3\frac{1}{2} : 7$

$$3\frac{1}{2} = \frac{7}{2}$$

$$3\frac{1}{2} : 7$$

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

$$= \frac{7}{2}$$

$$= \frac{7}{2} \times \frac{1}{7}$$

$$= \frac{1}{2} = 1 : 2 \text{ (Ans)}$$

viii) 1 hour : 45 mins

$$1 \text{ hour} = 60 \text{ mins}$$

$$1 \text{ hour} : 45 \text{ mins}$$

$$= 60 \text{ mins} : 45 \text{ mins}$$

$$= \frac{60}{45}$$

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

$$= 4 : 3 \text{ (Ans)}$$

$$\begin{aligned}
 & \text{vi) } 4 \text{ min} : 45 \text{ sec} & 4 \text{ min} = 240 \text{ sec} \\
 & = 240 \text{ sec} : 45 \text{ sec} \\
 & = \frac{240}{45} \times \frac{16}{16} \\
 & = \frac{16}{3} \\
 & = 16 : 3 \text{ (Ans)}
 \end{aligned}$$

Q.10  
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$$\begin{aligned}
 \text{(1) } & \text{Q.iii) } 2\frac{1}{3} : 3\frac{1}{2} : 1\frac{1}{4} \\
 & = \frac{7}{3} : \frac{7}{2} : \frac{5}{4} \\
 & = \frac{7}{3} \times \frac{4}{4} : \frac{7}{2} \times \frac{6}{6} : \frac{5}{4} \times \frac{12}{12} \\
 & = 28 : 42 : 15 \text{ (Ans)}
 \end{aligned}$$

$$\begin{aligned}
 \text{(2) } & \text{width} : \text{length} \\
 & = 60 \text{ cm} : 80 \text{ m} \\
 & = \frac{60 \text{ cm}}{80 \text{ cm}} \\
 & = \frac{60}{80} \\
 & = \frac{3}{4} \text{ (Ans)}
 \end{aligned}$$

(3) State, true or false :

- i) A ratio equivalent to 7:9 is 27:21. False
- ii) A ratio equivalent to 5:4 is 240:192. True
- iii) A ratio of 250 gm and 3kg is 1:12. True

4.20  
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(4)  $15 \text{ kg} : 35 \text{ kg}$

$6 \text{ years} : 14 \text{ years}$

$= \frac{15 \div 5}{35 \div 5}$

$= \frac{6 \div 2}{14 \div 2}$

$= \frac{3}{7}$

$= \frac{3}{7}$

$\therefore \frac{3}{7} = \frac{3}{7}$

$\therefore 15 \text{ kg} : 35 \text{ kg}$  is same as  $6 \text{ years} : 14 \text{ years}$ .

(5)  $6 \text{ g} : 15 \text{ g}$

$36 \text{ cm} : 90 \text{ cm}$

$= \frac{6 \div 3}{15 \div 3}$

$= \frac{36 \div 12}{90 \div 12}$

$= \frac{2}{5}$

$= \frac{3}{5}$

~~36 : 90~~

$\therefore \frac{2}{5} = \frac{2}{5}$

$\therefore 6 \text{ g} : 15 \text{ g}$  is same as  $36 \text{ cm} : 90 \text{ cm}$

4.20  
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(6)  $3.5 \text{ m}, 475 \text{ cm}$  and  $2.8 \text{ m}$

$3.5 \text{ m} : 475 \text{ cm} : 2.8 \text{ m}$   
 $= 350 \text{ cm} : 475 \text{ cm} : 280 \text{ cm}$

$= \frac{350}{5} : \frac{475}{5} : \frac{280}{5}$

$= 70 : 95 : 56$  (Ans)

HCF of  $350 \text{ cm},$   
 $475 \text{ cm}, 280 \text{ cm}$

$5 \overline{) 350, 475, 280}$   
 $70, 95, 56$

⑦ 1 dozen = 12  
5 dozen =  $12 \times 5$   
= 60

1 score = 20  
2 scores =  $2 \times 20$   
= 40

Ratio of 5 dozen to 2 scores  
=  $\frac{60}{40}$   
=  $\frac{3}{2}$  (Ans)

EXERCISE - 11(B)

① i) Salary = ₹12,000  
Expenditure = ₹8,500

Ratio of salary to expenditure =  $\frac{12,000}{8,500}$   
=  $\frac{24}{17}$   
= 24 : 17 (Ans)

ii) Expenditure = ₹8,500  
Savings = ₹12,000 - ₹8,500  
= ₹3,500

Ratio of expenditure to savings =  $\frac{8,500}{3,500}$  =  $\frac{17}{7}$   
= 17 : 7 (Ans)