

Exercise = 11 (A)

1) Express each of the following ratios in its simplest form:

(a) i) 4:6

Ans $\frac{4}{6} = \frac{2}{3} = 2:3$

ii) 48:54

Ans $\frac{48}{54} = \frac{24}{27} = \frac{8}{9} = 8:9$

iii) 200:250

Ans $\frac{200}{250} = \frac{20}{25} = \frac{4}{5} = 4:5$

(b) i) 5 kg:800 gm

Ans $\frac{5000 \text{ gm}}{800 \text{ gm}} = \frac{50}{8} = \frac{25}{4} = 25:4$

ii) 30 cm : 2 m

$$A \Rightarrow \frac{30 \text{ cm}}{200 \text{ cm}} = \frac{3 \text{ cm}}{20 \text{ cm}} = \boxed{3:20}$$

iii) 3 m : 90 cm

$$A \Rightarrow \frac{300 \text{ cm}}{90 \text{ cm}} = \frac{300}{90} = \frac{10}{3} = \boxed{10:3}$$

iv) 2 years : 9 months

$$A \Rightarrow \frac{24 \text{ months}}{9 \text{ months}} = \frac{8}{3} = \boxed{8:3}$$

v) 1 hours : 45 min

$$A \Rightarrow \frac{60 \text{ min}}{45 \text{ min}} = \frac{4}{3} = \boxed{4:3}$$

vi) 4 min : 45 sec

$$A \Rightarrow \frac{240 \text{ sec}}{45 \text{ sec}} = \frac{16}{3} = \boxed{16:3}$$

(c) i) $1\frac{1}{2}$: $2\frac{1}{2}$

$$A \Rightarrow \frac{3}{2} : \frac{5}{2} = \frac{3}{5} \quad \text{or} \quad \frac{3}{2} = \frac{5}{2}$$
$$\Rightarrow \frac{3}{2} \times \frac{2}{5} = \frac{3}{5}$$
$$\Rightarrow \boxed{3:5}$$

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

Ans $3\frac{1}{2} \div \frac{7}{1} = \frac{7}{2} \div \frac{7}{1} = \frac{7}{2} \times \frac{1}{7} = \frac{1}{2}$

$\Rightarrow 1 : 2$

iii) $2\frac{1}{3} : 3\frac{1}{2} : 1\frac{1}{4}$

Ans $\frac{7}{3} : \frac{7}{2} : \frac{5}{4}$ LCM $\Rightarrow 3, 2, 4 \Rightarrow 12$

$\Rightarrow \frac{7}{3} \times 12 : \frac{7}{2} \times 12 : \frac{5}{4} \times 12$

$\Rightarrow 28 : 42 : 15$

iv) $x^2 : 4x$

Ans $\frac{x^2}{4x} = \frac{x \times x}{4 \times x} = \frac{x}{4} = x : 4$

v) $2.5 : 1.5$

Ans $2.5 : 1.5 = \frac{2.5}{1.5} = \frac{25}{15} = \frac{5}{3}$

$\Rightarrow \frac{25}{15} \times \frac{10}{10} = \frac{250}{150}$

$\Rightarrow \frac{250}{150} = \frac{5}{3} = 5 : 3$

(vi) 25:5

Ans $\Rightarrow \frac{2.5}{5} = \frac{25}{5 \times 10} = \frac{1}{2}$
 $\Rightarrow 1:2$

(2) Ans Width of field = 60 m
 Length = 80 m

Ratio between width and length = $\frac{60}{80} = 3:4$

(3) i) false: A ratio equivalent to 40:9 is 27:21.
 false

ii) Ans A ratio equivalent to 5:4 is 240:192. True

iii) A ratio of 250 gm and 3kg is 1:12. True

(4) Ans Yes, the ratio of 15 kg and 35 kg is same as the ratio of 6 years and 14 years.

(5) Ans Yes, the ratio of 6g and 15g same as the ratio of 36 cm and 90 cm.

(6) Ans 3.5 m = 3.5 x 100 cm = 350 cm (converting)
 2.8 m = 2.8 x 100 cm = 280 cm (each from metre to centimetre)
 350:475:280 are divided by 5. (centimetre)
 $\Rightarrow 70:95:56$

4) As 5 dozen = 12×5 , 2 scores = 20×2
 \Rightarrow 60 \Rightarrow 40

$$\Rightarrow \frac{60}{40} = \frac{6}{4} = \frac{3}{2} = \text{3:2}$$