

Exercise 11 A

1. Express each of the following

a, i) 4:6

$$\text{Soln: } = \frac{4}{6} = \frac{2}{3} = 2:3$$

ii) 48:54

$$\text{Soln: } = \frac{48}{54} = \frac{8}{9} = 8:9$$

iii) 200:250

$$\text{Soln: } = \frac{200}{250} = \frac{4}{5} = 4:5$$

b, i) 5 kg : 800 gm

$$\text{Soln: } 5 \text{ kg} \times 1000 \text{ gm} = 5000 \text{ gm}$$

$$\text{Ratio} = \frac{5000}{800} = \frac{25}{4} = 25:4$$

ii) 30 cm : 2 m

$$\text{Soln: } = 30 \text{ cm} : 200 \text{ cm}$$

$$= \frac{30}{200} = \frac{3}{20} = 3:20$$

iii) 3 m : 90 cm

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

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

iv 2 years : 9 months

Soln: 2 years = $2 \times 12 = 24$ months

$$\text{Required ratio} = \frac{9}{24} = \frac{3}{8} = 3:8$$

v 1 hour : 45 min

Soln: 1 hour : 45 min

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

$$= \frac{60}{45} = \frac{4}{3} = 4:3$$

b) vi 4 min : 45 sec

$$= 240 : 45 \text{ sec}$$

$$= \frac{240}{45} = \frac{16}{3}$$

$$= 16:3$$

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

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

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

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

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

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

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

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

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

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

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

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

Soln: $\frac{7}{3} : \frac{7}{2} : \frac{9}{4}$

$= \frac{7}{3} \times \frac{12}{12}$ L.C.M of denominators 3, 2 and 4 is 12

$= 7 \therefore \frac{7}{3} \times 12^1 : \frac{7}{2} \times 12^1 : \frac{9}{4} \times 12^3$

$= 28 : 42 : 15$

iv $x^2 : 4x$

Soln: $x^2 \div 4x$

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

v $2.5 : 1.5$

Soln: $\frac{25}{10} : \frac{15}{10}$

$= \frac{25^5}{10} \times \frac{10}{15^3} = \frac{5}{3} = 5 : 3$

vi $2.5 : 5$

Soln: $\frac{25}{10} : 5$

$= \frac{25^8}{10_2} \times \frac{1}{5^2} = \frac{1}{2} = 1 : 2$

2- Width of field is 60 m

Length of field = 80 m

Ratio of its width to its length = 60:80.

$$= \frac{60}{80} = \frac{3}{4} = 3:4$$

3- i- False

ii True

iii True

4- Ratio of weight 15 kg and 35 kg

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

Ratio of 6 years and 14 years

$$= \frac{6 \text{ years}}{14 \text{ years}} = \frac{3}{7} = 3:7$$

Yes, the ratio in both cases are same.

5- Ratio of 6g and 15g

$$= \frac{6}{15} = \frac{2}{5} = 2:5$$

Ratio of 36 cm and 90 cm

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

Yes, the ratio in both cases are same.

6- The given values = 3.5m, 475cm and 2.8m

$$= 3.5 \times 100 \text{ cm} : 475 \text{ cm} : 2.8 \times 100 \text{ cm}$$

$$= 350 \text{ cm} : 475 \text{ cm} : 280 \text{ cm}$$

$$= 70 \text{ cm} : 95 \text{ cm} : 56 \text{ cm}$$

The ratio is 70:95:56

7. Ratio between 5 dozen and 2 scores.
Given = 1 score = 20

then, 2 scores = $2 \times 20 = 40$

and 1 dozen = 12,

5 dozen = $12 \times 5 = 60$

Then, ratio = $60 : 40 = \frac{60}{40} = \frac{3}{2}$
 $= 3 : 2$