

EXERCISE 11(A)

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

a) i) 4:6

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

b) ii) ~~48:5~~ 5kg:800gm

Ans $\rightarrow 5\text{kg} : 800\text{gm} = 5000\text{gm} : 800\text{gm} = \frac{5000}{800} = \frac{50}{8} = \frac{25}{4} = 25:4$

c) v) 2.5:1.5

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

vi) 2.5:5

Ans $\rightarrow 2.5:5 = \frac{2.5}{5} = \frac{25}{50} = \frac{1}{2} = 1:2$

b) iv) 2 years: 9 months

Ans $\rightarrow 2\text{ years} : 9\text{ months} = 24\text{ months} : 9\text{ months} = \frac{24}{9} = \frac{8}{3} = 8:3$

1. a. ii) 48:54

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

iii) 200:250

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

b. ii) 30 cm: 2 m

$$\text{Ans} \rightarrow 30 \text{ cm} : 2 \text{ m} = 30 \text{ cm} : 200 \text{ cm} = \frac{30}{200} = \frac{3}{20} = 3:20$$

iii) 3 m: 90 cm

$$\text{Ans} \rightarrow 3 \text{ m} : 90 \text{ cm} = 300 \text{ cm} : 90 \text{ cm} = \frac{300}{90} = \frac{30}{9} = \frac{10}{3} = 10:3$$

v) 1 hour: 45 min

$$\text{Ans} \rightarrow 1 \text{ hour} : 45 \text{ min} = 60 \text{ min} : 45 \text{ min} = \frac{60}{45} = \frac{4}{3} = 4:3$$

vi) 4 min: 45 sec

$$\text{Ans} \rightarrow 4 \text{ min} : 45 \text{ sec} = 240 \text{ sec} : 45 \text{ sec} = \frac{240}{45} = \frac{16}{3} = 16:3$$

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

Ans $\rightarrow 1\frac{1}{2} : 2\frac{1}{2} = \frac{3}{2} : \frac{5}{2} = \frac{3 \times 2}{2 \times 2} = \frac{6}{4} = \frac{3}{2} = 3:2$

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

Ans $\rightarrow 3\frac{1}{2} : 7 = \frac{7}{2} : \frac{7}{1} = \frac{7}{2} \times \frac{1}{7} = \frac{7}{14} = \frac{1}{2} = 1:2$

iii) $x^2 : 4x$

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

2. Width = 60m

Length = 80m

Ratio = $\frac{60}{80} = \frac{6}{8} = \frac{3}{4} = 3:4$

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 250gm and 3kg is 1:12. True

4. Ratio of 15 kg and 35 kg = $15:35 = \frac{15}{35} = \frac{3}{7} = 3:7$

Ratio of 6 years and 14 years = $6:14 = \frac{6}{14} = \frac{3}{7} = 3:7$

As $3:7 = 3:7$

Yes, both the ratios are same.

5. Ratio of 6 g and 15 g = $6:15 = \frac{6}{15} = \frac{2}{5} = 2:5$

Ratio of 36 cm and 90 cm = $36:90 = \frac{36}{90} = \frac{2}{5} = 2:5$

As $2:5 = 2:5$

Yes, both the ratios are same.

6. Ratio of Ratio of 3.5 m, 475 cm and 2.8 m =

$3.5\text{ m} : 475\text{ cm} : 2.8\text{ m} = 350 : 475 : 280 = 70 : 95 : 56$

7. Ratio of 5 dozens and 2 scores = 5 dozens : 2 scores

= 60 : 40

= $\frac{60}{40}$

= $\frac{6}{4}$

= $\frac{3}{2}$

= 3 : 2

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

Ans $\rightarrow 2\frac{1}{3} : 3\frac{1}{2} : 1\frac{1}{4} = \frac{7}{3} : \frac{7}{2} : \frac{5}{4}$

LCM = 12

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

$= \frac{28}{1} : \frac{42}{1} : \frac{15}{1}$

$= 28 : 42 : 15$