

13/9/21

Ex-11(A)

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

(a) (i) 4:6

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

(iii) 200:250

$$= \frac{200}{250} = \frac{200 \div 50}{250 \div 50} = \frac{4}{5} = 4:5$$

(ii) 48:54

$$= \frac{48}{54} = \frac{48 \div 6}{54 \div 6} = \frac{8}{9} = 8:9$$

(b) (i) 5 kg : 800 gm

$$\Rightarrow 5 \text{ kg} = 5000 \text{ gm}$$

$$= \frac{5000 \text{ gm}}{800 \text{ gm}} = \frac{5000 \div 200}{800 \div 200} = \frac{25}{4} = 25:4 = 25 \text{ gm} : 4 \text{ gm}$$

(ii) 30 cm : 2 m

$$\Rightarrow 2 \text{ m} = 200 \text{ cm}$$

$$= \frac{30 \text{ cm}}{200 \text{ cm}} = \frac{30 \div 10}{200 \div 10} = \frac{3}{20} = 3:20$$

(iii) 3 m = 90 cm

$$\Rightarrow 3 \text{ m} = 300 \text{ cm}$$

$$\frac{300}{90} = \frac{300 \div 30}{90 \div 30} = \frac{10}{3} = 10:3$$

(iv) 2 years : 9 months

$$\Rightarrow 2 \text{ years} = 24 \text{ months}$$

$$\frac{24}{9} = \frac{24 \div 3}{9 \div 3} = \frac{8}{3} = 8:3$$

(v) 1 hour : 45 min
 \Rightarrow 1 hour = 60 min
 $= \frac{60}{45} = \frac{60 \div 15}{45 \div 15} = \frac{4}{3} = 4:3$

(vi) 4 min : 45 sec
 \Rightarrow 4 min = 240 sec
 $\neq \frac{240 \text{ sec}}{45 \text{ sec}} = \frac{240 \div 15}{45 \div 15} = \frac{16}{3} = 16:3$

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

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

$= \frac{3}{2} \times 2 = 3 \quad | \quad \frac{5}{2} \times 2 = 5$
 $3:5$

(iv) $x^2 : 4x$

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

(v) $2.5 : 1.5$

$= \frac{25}{15} = \frac{25 \div 5}{15 \div 5} = \frac{5}{3} = 5:3$

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

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

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

$= 7:14$

(vi) $2.5 : 5$

$= \frac{25}{10} : \frac{5}{1} = \frac{25 \div 5}{10 \div 5} =$

$= \frac{25}{10} \times \frac{1}{5} = \frac{5}{10}$

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

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

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

$= 28:42:15$

2. A field is 80 m long and 60 m wide. Find the ratio of its width to its length.

$$= \frac{60 \text{ m}}{80 \text{ m}} = \frac{60 \div 20}{80 \div 20} = \frac{3}{4} = 3:4 \quad \frac{6000}{8000} = \frac{6000 \div 2000}{8000 \div 2000} = \frac{3}{4} = 3:4$$

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 250 gm and 3 kg is 1:12. **True**

4. Is the ratio of 15 kg and 35 kg same as the ratio of 6 years and 14 years?

$$\frac{15}{35} = \frac{15 \div 5}{35 \div 5} = \frac{3}{7}$$

$$\frac{6}{14} = \frac{6 \div 2}{14 \div 2} = \frac{3}{7}$$

= Yes

5. Is the ratio of 6 g and 15 g same as the ratio of 36 cm and 90 cm?

$$\frac{6}{15} = \frac{6 \div 3}{15 \div 3} = \frac{2}{5}$$

$$\frac{36}{90} = \frac{36 \div 18}{90 \div 18} = \frac{2}{5}$$

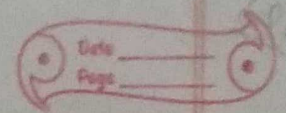
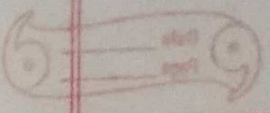
= Yes

6. Find the ratio between 8.5 m, 475 cm and 2.8 m.

$$= 850 \text{ cm} : 475 \text{ cm} : 280 \text{ cm}$$

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

$$= 70 : 95 : 56$$



7. Find the ratio between 5 dozen and 2 scores. (1 score = 20)

$$2 \text{ scores} = 2 \times 20 = 40$$

$$1 \text{ dozen} = 12$$

$$5 \text{ dozens} = 60$$

$$\text{ratio} = 60 : 40 = 3 : 2$$