RATIO

11(A)

1)

a) i) $4:6$

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

ii) $48:54$

$\Rightarrow \frac{48}{54} = \frac{8}{9} = 8:9$

iii) $200:250$

$\Rightarrow \frac{200}{250} = \frac{4}{5} = 4:5$

b)

i) $5\text{ kg} : 800\text{ gm} = 5000 : 800$

$(5 \times 1000\text{ gm} = 5000\text{ gm})$

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

ii) $30\text{ cm} : 2\text{ m} = 30\text{ cm} : 200\text{ cm}$

$(3 \times 100\text{ cm} = 300\text{ cm})$

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

iii) 3m : 90cm = 300 cm : 90 cm
(3 × 100 cm = 300 cm)
$= \frac{300}{90} = \frac{10}{3} = 10 : 3$

iv) 2 years : 9 months = 24 months : 9 months
(2 years)

A ⇒ (2 years = 2 × 12 = 24 months)

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

v) 1 hour : 45 min = 60 minutes : 45 minutes

1 hour = 60 minutes

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

vi) 4 min : 45 sec = 240 sec : 45 sec

(1 minute = 60 sec, 4 × 60 = 240 sec
$= \frac{240}{45} = \frac{16}{3} = 16 : 3$

6.

i) $1\frac{1}{2} : 2\frac{1}{2} : 2\frac{1}{2} = \frac{3}{2} : \frac{5}{2} : \frac{5}{2}$

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

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

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

iii) $2\frac{1}{3} : 3\frac{1}{2} : 1\frac{1}{4} = \frac{7}{3} : \frac{7}{2} : \frac{5}{4}$

$= \frac{7}{3} \times 12 : \frac{7}{2} \times 6 : \frac{5}{4} \times 3$

L.C.M of 2, 3 and 4 = 12.

$= 28 : 42 : 15$

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

(v) $= 2.5 : 1.5 = \frac{25}{15} : \frac{5}{3} =$

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

or

$2.5 : 1.5 = \frac{25}{10} : 15 = \frac{25}{10} \div \frac{15}{10}$

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

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v) $2.5 : 1.5 = \frac{25}{10} : \frac{15}{10} = \frac{5}{3} = 5 : 3$

Or, $2.5 : 1.5 = \frac{25}{10} : \frac{15}{10} = \frac{25}{10} : \frac{15}{10}$

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

vi) $2.5 : 5 = \frac{25}{10} = \frac{15}{10} = \frac{25}{10} : \frac{15}{10}$

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

2.

Soln: Width of field = 60m

Length = field = 80m

Ratio between width of length = $\frac{30}{80} \frac{3}{4}$

3 : 4

3 : True or false:

i) A ratio equivalent to 7 : 9 is 27 : 27 False

ii) A ra

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

A:→

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

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

• Yes it is true.

5.

A:→ $\Rightarrow \frac{6}{15} = \frac{2}{5} = 2:5$

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

Yes, it is true.

6. Find the Ratio between 3.5 m, 475 cm and 2.8 m.

3.5 m = 350 cm

2.8 m = 280 cm

$= 350 : 475 : 280$

$= \frac{\cancel{350}^{70}}{\cancel{5}} : \frac{\cancel{475}^{95}}{\cancel{5}} : \frac{\cancel{280}^{56}}{\cancel{5}}$

$= 70 : 95 : 56$

7. Find the Ratio between 5 dozen & 2 scores [1 score = 20]

A. 1 dozen = 12

B. 5 dozen = 5×12
$= 60$

1 score = 20

2 scores = 2×20
$= 40$

Required Ratio = 60 : 40

$\frac{\cancel{60}^{3}}{\cancel{40}_{2}} = 3 : 2$