

Ex 11(A)

a) i) 4:6

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

ii) 48:54

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

iii) 200:250

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

iv) 5kg:800gm

a) 1kg = 1000gm

5kg = 5 × 1000 gm = 5000gm

5kg:800gm = 5000gm:800gm, $\frac{5000 \div 200}{800 \div 200} = 25:4$

v) 30cm:2m

a) 1m = 100cm

2m = 2 × 100cm = 200cm

30cm:2m = 30cm:200cm = $\frac{30}{200}, \frac{30 \div 10}{200 \div 10} = 3:20$

vi) 3m:90cm

a) 1m = 100cm

3m = 3 × 100cm = 300cm

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

vii) 2 years:9 months

a) 1 year = 12 months

2 years = 2 × 12 months = 24 months

2 years:9 months = 24 months:9 months = $\frac{24}{9}, \frac{24 \div 3}{9 \div 3} = 8:3$

v) 1 hour : 45 min

1 hour = 60 mins

1 hour : 45 min = 60 min : 45 min = $\frac{60}{45} = \frac{6 \times 10}{45 \times 3} = \frac{4}{3}$

vi) 4 min : 45 sec

1 min = 60 sec

4 min = 4 x 60 sec = 240

4 min : 45 sec = 240 sec : 45 sec = $\frac{240}{45} = \frac{240 \div 45}{45 \div 45} = \frac{16}{3}$

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

$\frac{2\frac{1}{2}}{\frac{1}{2}} = \frac{2 \times \frac{5}{2}}{\frac{1}{2}} = \frac{5}{\frac{1}{2}} = \frac{5 \times 2}{1} = 10$

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

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

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

$\frac{2\frac{1}{3}}{3} : \frac{2\frac{1}{2}}{2} : \frac{1\frac{1}{4}}{4} = \frac{7}{3} : \frac{7}{2} : \frac{5}{4} = \frac{7 \times 4}{3 \times 4} : \frac{7 \times 2}{2 \times 4} : \frac{5 \times 1}{4 \times 1} = \frac{28}{12} : \frac{14}{8} : \frac{5}{4}$

iv) 2 : 4 : 2

$\frac{2}{4} = \frac{2 \times 2}{4 \times 2} = \frac{1}{2}$

v) 2.5 : 1.5

$\frac{2.5}{1.5} \times 10 = \frac{25}{15} = \frac{5}{3}$

ii) 2.5 : 5

$\frac{2.5}{5} \times 10 = \frac{25}{50} = \frac{1}{2} = 0.5$

iii) Breadth = 60 m

Length = 80 m

Ratio of width to length = $\frac{60}{80} = \frac{3}{4}$

3) False

i) 5 : 4 = 240 : 192 → True

$\frac{5}{4} = \frac{240}{192} = \frac{120}{96} = \frac{40}{32} = \frac{5}{4}$

ii) 250 gm : 3 kg = 1 : 12 → True

$\frac{250}{3000} = \frac{25}{300} = \frac{1}{12}$

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

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

iv) $\frac{6}{15} = \frac{2}{5}$

kg : 15 kg = 30 cm : 10 cm

v) $3.5 : 2.5$

$\frac{3.5}{2.5} = \frac{350}{250} = \frac{7}{5}$

7) 1 dozen = 12
 5 dozen = $5 \times 12 = 60$
 1 score = 20
 2 score = $2 \times 20 = 40$
 5 dozen : 2 score = $\frac{60}{40} = \frac{3}{2} = 3:2$

11 (B) continued work

8) Rohit \rightarrow 60 km/h
 Manoj \rightarrow 40 km/h
 Time = ~~D~~ S

Time taken by Rohit = $\frac{D}{60}$
 Time taken by Manoj = $\frac{D}{40}$

Ratio = $\frac{D}{60} : \frac{D}{40}$

= $\frac{D}{260} \times \frac{40^2}{D} = 3:2$

9) i) Chess = ~~40~~ 20 : ~~10~~ 5 = 5:18
 Badminton ~~144~~ 72 : ~~36~~ 18

ii) Badminton = ~~144~~ 72 : ~~24~~ 12 = 3:2
 Table tennis 96 : 32 = 3:1

iii) Volleyball = $360 - (40 + 26 + 144)$ 140
 $= 360 - 210 = 150$
 $= 90$

76 Table tennis = ~~96~~ 48 : ~~19~~ 19 = 19:26
 80 Volleyball = ~~80~~ 40 : ~~20~~ 20 = 2:1

9) i) 30 : 210
 40 : 140
 20 : 70
 10 : 35
 2 : 7

10) Length = 13 cm
 Radius = 4 cm
 Diameter = Radius $\times 2 = 4 \text{ cm} \times 2 = 8 \text{ cm}$
 a) $\frac{18 \text{ cm}}{8 \text{ cm}} = \frac{9}{4}$

11) i) A B
 ii)

Distance in km from A's home to school =	4	18	8	16	6
Distance (in km) from B's home to school =	2	9	4	8	3

12) Student : teacher = 45 : 2
 Total no. of students = 4050
 No. of students = 45x
 $\Rightarrow 45x = 4050$
 $x = \frac{4050}{45}$

$x = 90$
 No. of teachers are 2x
 $= 2 \times 90 = 180$