Ex - 11 (A)

1) a) i) $4 : 6$

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

ii) $48 : 54$

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

iii) $200 : 250$

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

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

$= 5$

b) i) 5kg : 800 gm
= 5kg = 5 × 1000g = 5000 g
= 5000/800 = 25/4 = 25 : 4

ii) 30 cm : 2m
= 2m = 2 × 100 cm = 200 cm
= 30/200 = 3/20 = 3 : 20

iii) 3m : 90 cm
= 3m = 3 × 100 cm = 300 cm
= 300/90 = 10/3 = 10 : 3

iv) 2 years : 9 months
= 2 years = 2 × 12 months = 24 months
= 24/9 = 8/3 = 8 : 3

v) 1 hour : 45 min
= 1 hour = 1 × 60 min = 60 min
= 60/45 = 4/3 = 4 : 3

vi) 4 min : 45 sec
= 4 min = 4 × 60 s = 240 s
= 240/45 = 16/3 = 16 : 3

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

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

iii) $2\frac{1}{3} : 3\frac{1}{2} : 1\frac{1}{4}$
$= \frac{7}{3} : \frac{7}{2} : \frac{5}{4}$
= LCM = 12
$= \frac{7}{3} \times \frac{12}{1} : \frac{7}{2} \times \frac{12}{1} : \frac{5}{4} \times \frac{12}{1}$
= 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
$= \frac{25}{10} : \frac{15}{10} = \frac{25}{10} \div \frac{15}{10}$
$= \frac{25}{10} \times \frac{10}{15} = \frac{5}{3} = 5 : 3$

vi) 2.5 : 5
$= \frac{25}{10} : \frac{5}{1} = \frac{25}{10} \div \frac{5}{1}$
$= \frac{25}{10} \times \frac{1}{5} = \frac{5}{10} = \frac{1}{2} = 1 : 2$

2) Sol) Given,
Field width = 60 m
Field length = 80 m
Ratio of width : length = 60 m : 80 m
$= 60 : 80 = \frac{60}{80} = \frac{3}{4} = 3:4$

3) i) False
Correct statement : A ratio equivalent to 7:8 is 8:7

ii) True
Since, $\frac{240}{192} = \frac{5}{4} = 5:4$

$240 \div 48 = 5$
$192 \div 48 = 4$

iii) True,
Since, 250 g : 3 kg
$= 250\text{g} : 3000\text{g}$
$= \frac{3000}{250} = \frac{12}{1} = 12:1$

4) Sol) Ratio of weight 15 kg and 35 kg
$= \frac{15}{35} = \frac{3}{7} = 3:7$
Ratio of 6 years and 14 years
$= \frac{6}{14} = \frac{3}{7} = 3:7$
Yes, the ratio in both cases are same.

5) Sol) Ratio of 6g and 15g
$= \frac{6}{15} = \frac{2}{5} = 2:5$
Ratio of 36 cm and 90 cm
$= \frac{36}{90} = \frac{2}{5} = 2:5$
Yes, the ratio in both cases are same.

6) Sol) The given values are = 3.5 m, 475 cm and 2.8 m
Convert all the values into cm. 1 m = 100 cm
3.5 × 100 = 350 cm
2.8 × 100 = 280 cm [H.C.F = 5]
∴ 350 cm : 475 cm : 280 cm
HCF of 350, 475, 280 = 5
$\frac{350}{5} : \frac{475}{5} : \frac{280}{5} = 70 : 95 : 56$

5 | 350, 475, 280
70, 95, 56

280 | 350 (1
−280
70 | 280 (4
−280
0

70 | 475 (6
−420
55 | 70 (1
−55
15 | 55 (3
−45
10 | 15 (1
−10
5 | 10 (2
−10
0

7) Sol) Given,
5 dozen and 2 scores
Since,
1 dozen = 12 and 1 score = 20
So,
5 dozen = 5 × 12
= 60
2 score = 2 × 20
= 40
Ratio = $\frac{60}{40} = \frac{3}{2} = 3 : 2$