Access NCERT Solutions for Class 6 Chapter 12: Ratio and Proportion Exercise 12.2

1. Determine if the following are in proportion.

(a) 15, 45, 40, 120

(b) 33, 121, 9, 96

(c) 24, 28, 36, 48

(d) 32, 48, 70, 210

(e) 4, 6, 8, 12

(f) 33, 44, 75, 100

Solutions:

(a) 15, 45, 40, 120

15 / 45 = 1 / 3

40 / 120 = 1 / 3

Hence, 15: 45 = 40:120

∴ These are in a proportion

(b) 33, 121, 9, 96

33 / 121 = 3 / 11

9 / 96 = 3 / 32

Hence 33:121 ≠ 9: 96

∴ These are not in a proportion

(c) 24, 28, 36, 48

24 / 28 = 6 / 7

36 / 48 = 3 / 4

Hence, 24: 28 ≠ 36:48

∴ These are not in a proportion

(d) 32, 48, 70, 210

32 / 48 = 2 / 3

70 / 210 = 1 / 3

Hence, 32: 48 ≠ 70: 210

∴ These are not in a proportion

(e) 4, 6, 8, 12

4 / 6 = 2 / 3

8 / 12 = 2 / 3

Hence 4: 6 = 8: 12

∴ These are in a proportion

(f) 33, 44, 75, 100

33/ 44 = 3/ 4

75 / 100 = 3 / 4

Hence, 33:44 = 75: 100

∴ These are in a proportion

2. Write True (T) or False (F) against each of the following statements :

(a) 16 : 24 :: 20 : 30

(b) 21: 6 :: 35 : 10

(c) 12 : 18 :: 28 : 12

(d) 8 : 9 :: 24 : 27

(e) 5.2 : 3.9 :: 3 : 4

(f) 0.9 : 0.36 :: 10 : 4

Solutions:

(a) 16: 24 :: 20: 30

16 / 24 = 2 / 3

20 / 30 = 2 / 3

Hence, 16: 24 = 20: 30

Therefore True

(b) 21: 6:: 35: 10

21 / 6 = 7 / 2

35 / 10 = 7 / 2

Hence, 21: 6 = 35: 10

Therefore True

(c) 12: 18 :: 28: 12

12 / 18 = 2 / 3

28 / 12 = 7 / 3

Hence, 12: 18 ≠ 28:12

Therefore False

(d) 8: 9:: 24: 27

We know that = 24 / 27 = (3 × 8) / (3 × 9)

= 8 / 9

Hence, 8: 9 = 24: 27

Therefore True

(e) 5.2: 3.9:: 3: 4

As 5.2 / 3.0 = 4 / 3

Hence, 5.2: 3.9 ≠ 3: 4

Therefore False

(f) 0.9: 0.36:: 10: 4

0.9 / 0.36 = 90 / 36

= 10 / 4

Hence, 0.9: 0.36 = 10: 4

Therefore True

3. Are the following statements true?

(a) 40 persons : 200 persons =   15 :   75

(b) 7.5 litres : 15 litres = 5 kg : 10 kg

(c) 99 kg : 45 kg =   44 :   20

(d) 32 m : 64 m = 6 sec : 12 sec

(e) 45 km : 60 km = 12 hours : 15 hours

Solutions:

(a) 40 persons : 200 persons = □ 15 : □ 75

40 / 200 = 1 / 5

15 / 75 = 1 / 5

Hence, True

(b) 7.5 litres : 15 litres = 5 kg : 10 kg

7.5 / 15 = 1 / 2

5 / 10 = 1 / 2

Hence, True

(c) 99 kg : 45 kg = □ 44 : □ 20

99 / 45 = 11 / 5

44 / 20 = 11 / 5

Hence, True

(d) 32 m : 64 m = 6 sec : 12 sec

32 / 64 = 1 / 2

6 / 12 = 1 / 2

Hence, True

(e) 45 km : 60 km = 12 hours : 15 hours

45 / 60 = 3 / 4

12 / 15 = 4 / 5

Hence, False

4. Determine if the following ratios form a proportion. Also, write the middle terms and extreme terms where the ratios form a proportion.

(a) 25 cm : 1 m and   40 :   160

(b)39 litres : 65 litres and 6 bottles : 10 bottles

(c) 2 kg : 80 kg and 25 g : 625 g

(d) 200 mL : 2.5 litre and   4 :   50

Solutions:

(a) 25 cm : 1 m and □ 40 : □ 160

25 cm = 25 / 100 m

= 0.25 m

0.25 / 1 = 1 / 4

40 / 160 = 1 / 4

Yes, these are in a proportion

Middle terms are 1 m, □ 40 and Extreme terms are 25 cm, □ 160

(b) 39 litres : 65 litres and 6 bottles : 10 bottles

39 / 65 = 3 /5

6 / 10 = 3 / 5

Yes, these are in a proportion

Middle terms are 65 litres, 6 bottles and Extreme terms are 39 litres, 10 bottles

(c) 2 kg : 80 kg and 25 g : 625 g

2 / 80 = 1 / 40

25 / 625 = 1 / 25

No, these are not in a proportion

(d) 200 mL : 2.5 litre and □ 4 : □ 50

1 litre = 1000 ml

2.5 litre = 2500 ml

200 / 2500 = 2 / 5

4 / 50 = 2 / 25

Yes, these are in a proportion

Middle terms arte 2.5 litres, □ 4 and Extreme terms are 200 ml, □ 50