ALLEN

DPP
DAILY PRACTICE PROBLEM

Ratio and Proportion DPP-01

Multiple choice questions

1. The ratio 28 : 48 in the simplest form is
   (1) 5 : 7   (2) 7 : 12   (3) 5 : 12   (4) none of these

2. In a class, there are 30 boys and 40 girls. The ratio of boys to girls is
   (1) 4 : 3   (2) 3 : 4   (3) 4 : 5   (4) none of these

3. The ratio of 1.5 m to 100 cm is
   (1) 1 : 15   (2) 15 : 10   (3) 10 : 15   (4) 15 : 1

4. In 2 : 3 ☐ 1 : 2, the box can be filled with
   (1) >   (2) <   (3) =   (4) none of these

5. On dividing ₹210 between A and B in the ratio 5 : 2, the share of A is
   (1) ₹100   (2) ₹40   (3) ₹150   (4) none of these

6. The cost of a car is ₹5,00,000. The cost of a motorbike is ₹60,000. The ratio of the cost of motorbike to the cost of car is
   (1) 1 : 6   (2) 3 : 25   (3) 1 : 4   (4) 25 : 3

7. The ratio 4 m to 50 cm is :
   (1) 2 : 5   (2) 3 : 5   (3) 8 : 1   (4) 1 : 8

8. A and B got 40 marks and 60 marks respectively in their science examination. Marks of A is how much less than the marks of B?
   (1) 10   (2) 20   (3) 30   (4) 40

9. The cost of a bottle is ₹20 the cost of a pencil is ₹10. How many times of cost of a pencil is cost of a bottle?
   (1) 2 times   (2) 3 times   (3) 4 times   (4) None of these

10 The cost of 5 packets of chocolates is ₹400. Find cost of 8 packets of chocolates?
   (1) 600   (2) 620   (3) 640   (4) 700

Subjective questions

11. The ratio of girls to boys in a class is 9 : 7 and there are 80 students in the class. How many girls are in the class?

12. There exists 45 people in an office. Out of which female employees are 25 and the remaining are males. Find the ratio of females to males.

13. Which ratio is larger in following pairs?
    (i) 4 : 7 or 5 : 8   (ii) 15 : 16 or 24 : 25

14. In a class, one out of every six students in the class fails. If there are 54 students in the class, find the number of students pass.

15. A sum of Rs. 6600 is to be divided between Ramesh and Suresh in the ratio 2 : 3. How much will each get?

SOLUTIONS DPP-01

1. **Option (2)**

$$\frac{28 \div 4}{48 \div 4} = \frac{7}{12} = 7 : 12$$

2. **Option (2)**

Required ratio = $\frac{30}{40} = \frac{3}{4}$ = 3 : 4

3. **Option (2)**

$$\frac{1.5 \times 100}{100} = \frac{1.5}{1} = \frac{15}{10} = 15 : 10$$

4. **Option (1)**

$$\frac{2 \times 2}{3 \times 2} = \frac{4}{6} > \frac{1 \times 3}{2 \times 3} = \frac{3}{6}$$

$$\frac{4}{6} > \frac{3}{6}$$

so 2 : 3 > 1 : 2

5. **Option (3)**

Share of A = $\frac{5}{5+2}$ × 210

= $\frac{5}{7}$ × 210

= 5 × 30

= ₹ 150

6. **Option (2)**

Required ratio = $\frac{60,000}{5,00,000} = \frac{6}{50} = \frac{3}{25}$ = 3 : 25

7. **Option (3)**

Required ratio = $\frac{4 \times 100}{50} = \frac{8}{1}$ = 8 : 1

8. **Option (2)**

60 – 40 = 20

9. **Option (1)**

$$\frac{\text{Cost of bottle}}{\text{Cost of a pencil}} = \frac{20}{10} = 2$$

10. **Option (3)**

$$\frac{5}{8} = \frac{400}{x}$$

$$x = \frac{400 \times 8}{5}$$

x = ₹ 640

11. Given : Ratio of girls to boys = 9 : 7

No. of Girls = $\dfrac{9}{16}$ × 80 = 45

12. Count of females = 25

Total count of employees = 45

The ratio of the count of females to count of males = 25 : 20 = 5 : 4

13. $\dfrac{4}{7}$ ✕ $\dfrac{5}{8}$ $\dfrac{24}{25}$ ✕ $\dfrac{15}{16}$

32 < 35   384 > 375

$\dfrac{4}{7} < \dfrac{5}{8}$ $\dfrac{24}{25} > \dfrac{15}{16}$

14. Given total no. of students = 54

And, one out of 6 students fail.

Let x be the no. of students fail.

So, $\dfrac{1}{6} = \dfrac{x}{54}$

Number of students who fails = 9 students

No. of students who pass = total students – No. of students fail

= 54 – 9

= 45 students

15. Given total amount to be divided = 6600

Sum of the term of ratio = 2 + 3 = 5

Ramesh's share of money = $\dfrac{2}{5}$ × 6600 = 1320 × 2 = Rs. 2640

Suresh's share of money = $\dfrac{3}{5}$ × 6600 = 1320 × 3 = Rs. 3960

DPP
DAILY PRACTICE PROBLEM

Ratio and Proportion DPP-02

Multiple choice questions

1. In p : q : : r : s, the extreme terms are
   (1) p and s   (2) q and r   (3) p and q   (4) None of these

2. In 4 : 7 : : 16 : 28, 4 and 28 are
   (1) extreme terms   (2) mean terms
   (3) 7 mean term and 16 extreme term (4) none of these

3. The value of x if 42, x, 18, 3 are in proportion is
   (1) 6   (2) 54   (3) 7   (4) none of these

4. The mean proportion between 16 and 49 is
   (1) 7   (2) 14   (3) 28   (4) 196

5. Which of the following is in proportion?
   (1) 4, 6, 7, 8   (2) 8, 10, 4, 5   (3) 22, 3, 11, 2   (4) 5, 7, 8, 9

6. If a : b : b : d, then the correct statement is
   (1) ab = cd   (2) b^2 = ac   (3) b^2 = ad   (4) bcd = a

7. The fourth term in the proportion 2.5, 50, 7.5 is
   (1) 54   (2) 540   (3) 150   (4) 0.54

8. The third proportional to 4 and 6 is
   (1) 1   (2) 9   (3) 16   (4) 32

9. Which of the following is a proportion?
   (1) 3, 27, 9, 9   (2) 5, 11, 15, 44   (3) 3, 5, 15, 25   (4) 4, 3, 36, 18

10. What are the extremes of proportion in the following :
    14 : 4 : : 49 : 14
    (1) 49, 4   (2) 14, 4   (3) 49, 14   (4) 14, 14

11. If the cost of 6 books is ₹216, then the cost of 5 books is
    (1) ₹ 100   (2) ₹ 102   (3) ₹ 85   (4) ₹ 180

12. The cost of 8 notebooks is ₹160. The cost of 1 notebook is
    (1) ₹10   (2) ₹100   (3) ₹20   (4) ₹5

13. The cost of 7 envelopes is ₹21. The cost of 15 envelopes is
    (1) ₹20   (2) ₹30   (3) ₹45   (4) ₹50

14. The weight of 30 books is 10 kg. The weight of 24 books is
    (1) 5 kg   (2) 8 kg   (3) 6 kg   (4) 4 kg

15. If 25, 35 and x are in continued proportion, then find the value of x.
    (1) 45   (2) 25   (3) 64   (4) 49

Subjective questions

16. The first, second and fourth terms in a proportion are 64, 224, 434 respectively. Find the third term.

17. 13 Candy bars weigh 26 ounces. What is the weight of 35 candy bars?

18. Jacob bought one bulb of elephant garlic for Rs. 2. How many bulbs can Stephanie buy if she has Rs. 12?

19. A bike runs 300 km in 5 hrs. How many km does it run in 8 hrs?

20. 4 dozen of bananas cost Rs. 96. Find the cost of 130 similar bananas.

SOLUTIONS DPP-02

1. **Option (1)**

   In p : q :: r : s, the extreme terms are p & s.

2. **Option (1)**

   4 and 28 are extreme terms.

3. **Option (3)**

   42 : x :: 18 : 3

   x × 18 = 42 × 3

   x = $\dfrac{42 \times 3}{18}$

   x = 7

4. **Option (3)**

   Mean proportion = $\sqrt{16 \times 49}$

   = 4 × 7 = 28

5. **Option (2)**

   Product of means

   = 10 × 4 = 40

   Product of extremes

   = 8 × 5

   = 40

   So, 8, 10, 4 and 5

   are in proportion

6. **Option (3)**

   a × d = b × b

   $b^2 = ad$

7. **Option (3)**

   2.5 : 50 :: 7.5 : x

   2.5 × x = 50 × 7.5

   x = $\dfrac{50 \times 7.5}{7.5}$

   x = 50 × 3

   x = 150

8. **Option (2)**

   4 : 6 :: 6 : x

   4 × x = 6 × 6

   x = $\dfrac{6 \times 6}{4}$

   x = $\dfrac{36}{4}$

   x = 9

9. **Option (3)**

An arrangement of numbers is a proportion when product of extremes is equal to product of mean.

Here, 3 : 5 : : 15 : 25

25 × 3 = 15 × 5

75 = 75

10. **Option (4)**

Extreme of proportion = 14, 14

11. **Option (4)**

∵ cost of 6 books = 216

∴ cost of 5 books = ₹ $\dfrac{216}{6}$ × 5

= ₹ 180

12. **Option (3)**

∵ cost of 8 notebooks = ₹160

∴ cost of 1 notebook = ₹ $\dfrac{16}{8}$

= ₹ 20

13 **Option (3)**

∵ cost of 7 envelopes = ₹21

∴ cost of 15 envelops = $\dfrac{21}{7}$ × 15

= ₹ 45

14. **Option (2)**

∵ weight of 30 books = 10 kg

∴ weight of 24 books = $\dfrac{10}{30}$ × 24 kg

= 8 kg

15. **Option (4)**

In continued proportion,

The ratio of first to second is equal to the ratio of second to third.

∴ 25 : 35 = 35 : x

$\Rightarrow \dfrac{25}{35} = \dfrac{35}{x}$

$\Rightarrow x = \dfrac{35 \times 35}{25}$

$\Rightarrow x = 49$

16. Let the third term be x.

64, 224, x and 434 are in proportion

64 **:** 224 **: :** x **:** 434

224 × x = 434 × 64

$\Rightarrow$ x = 124

17. 13 : 26 : : 35 : x

13 × x = 26 × 35

x = $\dfrac{26 \times 35}{13}$ = 70 ounces

18. 1 : 2 : : x : 12

12 × 1 = 2 × x

x = 6

So, Stephanie can buy 6 bulbs if she has Rs. 12.

19. Distance covered by bike in 5 hrs = 300 km

Distance covered by bike in 1 hrs = $\dfrac{300}{5}$ = 60 km

Distance covered by bike in 8 hrs = 60 × 8 = 480 km

20. Cost of 4 dozen (48 bananas) = Rs. 96

Cost of 1 banana = $\dfrac{96}{48}$ = Rs. 2

Cost of 130 bananas = 2 × 130 = Rs. 260.