



## MATHS

# **BOOKS - MTG IIT JEE FOUNDATION**

# **RATIO AND PROPORTION**

Illustrations

**1.** Find the ratio of 40 paise to Rs. 2.

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2. A basket ball team consists of 9 boys are 6 girls.

What is the ratio of

girls to boys?

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**3.** A basket ball team consists of 9 boys are 6 girls.

What is the ratio of

boys to the total number of members in the team?



**4.** Compare the ratio 3:5 and 4:3.





7. Are the following numbers in proportion?

22,33,42,63.



8. Are the following numbers in proportion?

15,20,25,30.

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**9.** Find x in the following proportions.

x:3::57:19





**10.** Find x in the following proportions.

4:5::x:25

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**11.** The ratio of the length and breadth of a tennis ground is 3:2. Find the length if the breadth is 28 metres.

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12. 70 students consume 630 kg of wheat in a month.How many kilograms of wheat is required for 120 students in a month?

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13. A car can travel 360 km in 12 litres of petrol. How

much distance will it travel in 20 litres of petrol?

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Solved Examples

1. Express the following ratios in their simplest form :

150:400



Rs. 8.40 to Rs. 3.15





**4.** Find the ratio of the following:

12.80 m to 320 cm



**5.** Compare the following:

5:12 and 3:8



**6.** Compare the following:

2:3 and 4:6



**8.** Raj earns Rs .25,000 per month and saves Rs. 5000 per month. Find the ratio of

earning to saving (per month).



9. Raj earns Rs .25,000 per month and saves Rs. 5000

per month. Find the ratio of

earning to expenditure (per month).

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**10.** Find the value of x in each of the following, so

that the numbers are in proportion.

4, 5, x, 480

11. Find the value of x in each of the following, so

that the numbers are in proportion.

9, 21, 33, x

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**12.** Three friends A, B and C, share a cake in the ratio 5:7:4. The cake costs 96. How much does each one have to pay for his share ?

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**13.** Find the ratio of the price of coffee to that of tea, when coffee costs 35 per 100 g and tea costs Rs.70 per kilogram.

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**14.** Divide Rs. 625 between Alok and Sangita in the ratio 2:3.

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15. The first second and fourth terms of a proportion

are 36, 81 and 63 respectively. Find the third term.



**17.** An electric pole caste a shadow of length 20 metres at a time when a tree 6 metres high caste a shadow of length 8 metres. Find the height of the pole.



**18.** My mother is three times older to me. I am twice as old as my younger brother. Then find the ratio of my mother's age to my brother's age.

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**19.** School bus A travels 198 km in 12 litres of diesel whereas school bus B travels 240 km in 16 litres. Find out which bus requires less quantity of diesel.



**20.** Find x if 36, 54, 20, x are in proportion.



### Ncert Section Exercise 121

**1.** There are 20 girls and 15 boys in a class.

What is the ratio of number of girls to the number

of boys?

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**2.** There are 20 girls and 15 boys in a class.

What is the ratio of number of girls to the total

number of students in the class?



**3.** Out of 30 students in a class, 6 like football, 12 like cricket and remaining like tennis. Find the ratio of Number of students liking football to number of students liking tennis.



**4.** Out of 30 students in a class, 6 like football, 12 like cricket and remaining like tennis. Find the ratio of Number of students liking cricket to total number of students.



### 5. See the figure and find the ratio of

Number of triangles to the number of circles inside

the rectangle.





6. See the figure and find the ratio of

Number of squares to all the figures inside the rectangle.





7. See the figure and find the ratio of

Number of circles to all the figures inside the

### rectangle.





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8. Distances travelled by Hamid and Akhtar in an hour are 9 km and 12 km. Find the ratio of speed of Hamid to the speed of Akhtar.



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9. Fill in the following blanks :

15		_ 10 _	
18	$-\overline{6}$		30



**10.** Find the ratio of the following:

81 to 108

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**11.** Find the ratio of the following:

98 to 63



**12.** Find the ratio of the following:

33 km to 121 km

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**13.** Find the ratio of the following:

30 minutes to 45 minutes .



**14.** Find the ratio of the following:

30 minutes to 1.5 hours



**17.** Find the ratio of the following:

500 mL to 2 litres



18. In a year, Seema earns Rs. 1,50,000 and saves Rs.

50,000. Find the ratio of

Money that Seema earns to the money she saves.



19. In a year, Seema earns Rs. 1,50,000 and saves Rs.

50,000. Find the ratio of





**20.** There are 800 doctors and 3600 patients in a hospital. Find the ratio of the number of doctors to the number of patients.



21. In a college, out of 4320 students, 2300 are girls.

Find the ratio of

Number of girls to the total number of students.



. . . . . .



22. In a college, out of 4320 students, 2300 are girls.

Find the ratio of

Number of boys to the number of girls.

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23. In a college, out of 4320 students, 2300 are girls.

Find the ratio of

Number of boys to the total number of students.

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**24.** Out of 1800 students in a school, 750 opted basketball, 800 opted cricket and remaining opted table tennis. If a student can opt only one game, find the ratio of

Number of students who opted basketball to the number of students who opted table tennis.

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**25.** Out of 1800 students in a school, 750 opted basketball, 800 opted cricket and remaining opted table tennis. If a student can opt only one game, find the ratio of

Number of students who opted cricket to the

number of students opting basketball.



**26.** Out of 1800 students in a school, 750 opted basketball, 800 opted cricket and remaining opted table tennis. If a student can opt only one game, find the ratio of

Number of students who opted basketball to the

total number of students.



**27.** Cost of a dozen pens is Rs 180 and cost of 8 ball pens is Rs 56. Find the ratio of the cost of a pen to the cost of a ball pen.



28. Age of Shikha is 14 years and her mother's age is

twice of her age then find the ratio of Shikha's age to

her mother's age.



29. Divide 20 pens between Sheela and Sangeeta in

the ratio of 3 : 2.



30. If age of Amit is 15 years and age of Rahul is 12

years, find the ratio of age of Amit to age of Rahul.



31. Present age of father is 42 years and that of his

son is 14 years. Find the ratio of

Present age of father to the present age of son.



32. Present age of father is 42 years and that of his

son is 14 years. Find the ratio of

Age of the father to the age of son, when son was 12

years old.



33. Present age of father is 42 years and that of his

son is 14 years. Find the ratio of

Age of father after 10 years to the age of son after 10

years.



34. Present age of father is 42 years and that of his

son is 14 years. Find the ratio of

Age of father to the age of son when father was 30

years old.



#### Ncert Section Exercise 12 2

**1.** Determine if the following are in proportion.

15, 45, 40, 120



- **3.** Determine if the following are in proportion.
- 24, 28, 36, 48



**4.** Determine if the following are in proportion.

32, 48, 70, 210



5. Determine if the following are in proportion.

4, 6, 8, 12

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6. Determine if the following are in proportion.

33, 44, 75, 100





7. Write True (T) or False (F) against each of the

following statements :

16:24::20:30



8. Write True (T) or False (F) against each of the

following statements :

21:6::35:10

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9. Write True (T) or False (F) against each of the

following statements :

12:18::28:12

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10. Write True (T) or False (F) against each of the

following statements :

8:9::24:27



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

5.2:3.9::3:4

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12. Write True (T) or False (F) against each of the

following statements :

0.9: 0.36: :10:4


**13.** Are the following statements true?

40 persons : 200 persons = Rs. 15 : 75



14. Are the following statements true?

7.5 litres : 15 litres = 5 kg : 10 kg

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15. Are the following statements true?

99 kg : 45 kg = 44:20



16. Are the following statements true?

32 m : 64 m = 6 sec : 12 sec



17. Are the following statements true?

45 km : 60 km = 12 hours : 15 hours



18. 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 Rs. 40: Rs.160

0

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19. Determine if the following ratios form a proportion. Also, write the middle terms and extreme terms where the ratios form a proportion.
39 litres : 65 litres and 6 bottles : 10 bottles

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

2 kg : 80 kg and 25 g : 625 g



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

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1. If the cost of 7 m of cloth is Rs 294, find the cost of

5 m of cloth.



2. Ekta earns Rs. 3000 in 10 days. How much will ne

she earn in 30 days?



**3.** If it has rained 276 mm in the last 3 days, how many cm of rain will fall in one full week (7 days)? Assume that the rain continues to fall at the same rate.



**4.** Cost of 5 kg of wheat is Rs. 91.50.

What will be the cost of 8 kg of wheat?



5. Cost of 5 kg of wheat is Rs. 91.50.

What quantity of wheat can be purchased in 183?



**6.** The temperature dropped 15 degree celsius in the last 30 days. If the rate of temperature drop remains the same, how many degrees will the temperature

drop in the next ten days



**7.** Shaina pays Rs 7500 as rent for 3 months. How much does she has to pay for a whole year, if the rent per month remains same?

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<b>8</b> . vi12 34
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9. The weight of 72 books is 9 kg. What is the weight

of 40 such books?



10. A truck requires 108 litres of diesel for covering a

distance of 594 km. How much diesel will be required

by the truck to cover a distance of 1650 km?



11. Raju purchases 10 pens for Rs 150 and Manish

buys 7 pens for Rs 84. Can you say who got the pens

cheaper?



12. Anish made 42 runs in 6 overs and Anup made 63

runs in 7 overs. Who made more runs per over?



## **Exercise Multiple Choice Questions Level 1**

1. A bulb costs Rs. 120. How many such bulbs can be

bought for 1440?

A. 15

B. 20

C. 12

D. 35

### Answer:

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2. If ₹ 760 is divided between A and B in the ratio 8:11,

then B's share is

A. Rs. 320

B. Rs. 400

C. Rs. 440

D. Rs. 540



**3.** Weight of 8 bags of sugar is 400 kg. The weight of 30 such bags is \_\_\_

A. 1500 kg

B. 1800 kg

C. 1600 kg

D. 2000 kg





**4.** The ratio of the number of boys to the number of girls in a school activity is 3:4. There are 18 more girls than boys. If 6 boys quit, what will be the new ratio of the number of boys to the number of girls?

A. 2:3 B. 4:7 C. 3:4

D. 5:3





## 5. The simplest ratio of 200 g and 1 kg is\_\_\_\_.

A. 1:3

B. 3:1

C. 11:5

D. 1:5

**Answer:** 

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**6.** A total of 500 pieces of sweets is to be divided among Radha, Ahmed and Krishna respectively in the ratio of 3 : 8: 14. How many pieces of sweets will Radha get?

A. 60

B. 80

C. 160

D. 280



7. The ratio of 240 cm to a metre in the simplest

form is expressed as \_\_\_\_\_.

A. 5:12

B. 12:5

C.24:10

D. 10:24



8. If cards are sold at the rate of 5 for 50, what will be

the cost of 6 dozen cards?

A. Rs. 720

B. Rs. 270

C. Rs. 600

D. Rs. 275

#### **Answer:**



**9.** If 2, 5, 8, x are in proportion, the value of x is \_\_\_\_\_.

A. 18

B. 20

C. 12

D. 24

### **Answer:**



**10.** It takes 90 minutes to wash 20 vehicles at a car wash. At this rate, how many minutes does it take to wash 5 vehicles?

A. 22

B. 14

C. 
$$22\frac{1}{2}$$
  
D.  $7\frac{1}{2}$ 

### **Answer:**





A. 4:3 and 5:6

B. 9: 12 and 15:20

C. 2:3 and 4:3

D. 15:12 and 9:6

### Answer:



## 12. Sugam earns Rs.1500 and spends Rs.300, what is

the ratio of earning to expenditure?

- A. 1:5
- B.5:1
- C. 5:2

D. 7:5

### Answer:

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**13.** The ratio of the number of pens to the number of erasers is 5: 1. If there are 30 pens and erasers together, what is the number of erasers?

A. 4

B. 5

C. 8

## **Answer:**

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**14.** A man filled his car petrol tank with 45 litres of petrol on Monday. The next day, he filled the tank with 30 litres of petrol. If the petrol costs Rs. 49.82 per litre, how much did he spend in all on petrol?

A. Rs. 3736.50

B. Rs. 2043.50

C. Rs. 2860.50

## D. Rs. 1899.50

## Answer:

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15. At the store, Mini paid Rs. 8.68 for seven oranges.

At this rate, how much will she pay for 24 oranges?

A. Rs. 32.84

B. Rs.29.76

C. Rs.19.86

D. Rs.24.38

## Answer:





17. Which among these is not an equivalent ratio of

4:9?

A. 8:18

B. 28:63

C. 17: 13

D. 16:36

**Answer:** 

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**18.** A movie started at 11:00 a.m. and ended at 2:15 p.m., including an interval of 15 minutes. Then the ratio of movie time (excluding interval) to interval is

A. 1:12

B. 12:1

C. 13:1

D. 1:13

Answer:

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**19.** The ratio of 225 ml to 4 litres is \_\_\_\_\_.

A. 18:160

**B**. 160:9

C. 9:160

D. 3:20

#### Answer:

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**20.** A train moves a distance of 80 km in one hour while a car moves 75 km in one hour. Find the ratio

of speed of train to the speed of car.

A. 15:16

B.6:5

C. 16: 15

D. 5:6

#### Answer:

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**21.** Which of the following is in proportion?

A. 2, 3, 4,5

B. 6, 4, 10,8

C. 16, 24, 20, 30

D. 8,9, 24, 21

#### Answer:

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22. If the cost of 12 toffees is Rs.69 then the cost of 1

such toffee is \_\_\_\_\_.

A. 37.55

 $\mathsf{B.}\,5.75$ 

C. 35.75

D. 52.75

### Answer:



**23.** A book of 1,456 pages has 9,95,904 words in it. The number of words in each page is \_\_\_\_.

A. 584

B. 684

C. 675

D. 595

## Answer:

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24. The weight of 20 diaries is 4 kg. What will be the

weight of 15 diaries?

A. 5 kg

B. 2 kg

C. 3 kg

D. 1 kg





26. The ratio 92 : 115 in its simplest form is

A. 23:25

B. 18:23

C. 3:5

D. 4:5



**27.** The sides of a triangle are in the ratio 1: 2:3. If its perimeter is 72 cm, the length of its largest side is

A. 40 cm

B. 50 cm

C. 36 cm

D. 54 cm



28. If Rs.816 is divided between A and B in the ratio

8:9, then B's share is

A. Rs.440

B. Rs. 320

C. Rs.432

D. None of these

Answer:



**29.** The ratio of 1 hour to 360 seconds is

A. 1:10

**B**. 10:1

**C**. 1:5

D. None of these

### **Answer:**



**30.** The ratio of the length and breadth of a football ground is 3 : 2. Find the length, if the breadth is 32 metres.
A. 16 m

B. 48 m

C. 24 m

D. 40 m

#### **Answer:**



**31.** The price of 5 metres of cloth is Rs. 225. How many metres of such cloth can be bought for Rs. 675?

A. 12

B. 15

C. 13

D. 14

#### **Answer:**



# **32.** If the cost of 25 packets of 12 pencils each is Rs.950, then the cost of 24 such packets of pencils is

A. Rs.608

B. Rs.720

C. Rs.640

D. Rs.912

Answer:

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**33.** Jiya is 8 years old. Her mother Seema is 32 years old. Find the ratio of Seema's age to Jiya's age 4 years ago.

A. 4:1

B.7:1

C.1:7

D.1:4

Answer:

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34. How many pencils can be purchased for Rs.3825,

if 9 dozen pencils cost Rs. 1530?

A. 270

B. 207

C. 265

D. 85

#### Answer:



## **35.** If 5:6::30:x, then the value of x is

- A. 24
- B. 12
- $\mathsf{C}.\,\frac{3}{2}$
- D. 36



Exercise Multiple Choice Questions Level 2

**1.** A bag contains 50 P, 25P and 10 P coins in the ratio `5 : 9 : 4 amounting to Rs 206 Find the number of coins of each type .

A. 200, 360, 160

B. 300, 460, 560

C. 100, 260, 300

D. 400, 360, 260

#### Answer:

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**2.** Abhay sold 50 wrist watches and 30 pens. If cost of 2 wrist watches is Rs.471.70 and 3 pens is Rs.23.16, what is the total cost of wrist watches and pens sold ?

A. Rs.13289.25

B. Rs.16480.60

C. Rs.15843.50

## D. Rs.12024.10

## **Answer:**

# **Watch Video Solution**

3. Find the share of A, B and C respectively, if 4340 is

divided into 1/2:1/3:1/5.

A. Rs.2100, Rs.1400, Rs.840

B. Rs.1400, Rs. 2100, Rs.840

C. Rs.840, Rs.2100, Rs.1400

D. Rs.1400, Rs.840, Rs. 2100



**4.** Out of 208 people in a party, 48 were children. The remaining people, males and females, are low in the ratio of 2 : 3. Find the number of males and females in the party respectively.

A. 84, 125

B. 125, 84

C. 96,64



**5.** Cost of a dozen red pens is Rs. 108 and cost of 9 black pens is Rs.54. Find the ratio of cost of a red pen to the cost of a black pen.

A. 2:1

B. 3:2

C.2:3

D. 1:3



**6.** A family of 4 members consumes 6 kg of sugar in a month. What will be the monthly consumption of sugar, if the number of family members becomes 6?

A. 1.5 kg

B. 2 kg

C. 10 kg

D. 9 kg



- **7.** Which of the following ratios is not equivalent to 21:27?
  - A. 105g: 135g
  - $\mathsf{B.}\,84kg\!:\!108kg$
  - C. Rs. 119: Rs. 153
  - D. 49m: 81m





8. Which of the following statements is false?

A. 5: 10: :100: 200

B. 2: 3: :10:16

C. 5.2: 3.9: :4:3

D. 16:24::20:30



9. B is a point on line segment AC such that AB: BC is

3 : 2. If AC = 40 cm, then length of BC is

A. 8 cm

B. 16 cm

C. 24 cm

D. 20 cm



**10.** A car travels a distance of 150 km in 3 hours and a train travels a distance of 120 km in 2 hours. What is the ratio of the speed of the car to that of the train?

A. 5:6

B.6:5

C.5:4

D. 5:3

Answer:

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**11.** Which of the following is incorrect?

A. 
$$0.6: 0.5 = 6:5$$

B. 
$$27:36 = 3:4$$

C.30:26 = 13:15

D. 3:7 = 45:105

#### Answer:



**12.** The cost of 15 cups of tea or 9 cups of coffee is Rs.115. Find the ratio of the price of one cup of tea to

that of coffee.

B.5:3

A. 3:5

**C**. 3 : 11

D.5:11

#### Answer:



13. An alloy is made of copper and zinc in the ratio

3:2. If the weight of zinc in the alloy is 20.4 g, what is

the weight of copper in the alloy?

# A. 27.2 g

B. 13.6 g

C. 30.6 g

D. 28.8 g

#### **Answer:**

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**14.** Divide 1690 marbles among A, B and C respectively in the ratio  $\frac{1}{2}:\frac{1}{3}:\frac{1}{4}$  Shares of A, B and

C respectively are

A. 520, 390, 780

B. 390, 520, 780

C. 520, 780, 390

D. 780, 520, 390

**Answer:** 

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**Exercise Matching The Following** 

## 1. Match the following

List-I List-II (P) Ratio of 6 days to 2 weeks is 1. 3:5 (O) Ratio of 9 km to 18 m is 2. 1:4 (R) Ratio of 18 mm to 3 cm is 3. 500 : 1 4. 3:7 (S) 3 months to 1 year A. P - 4, Q - 3, R - 1, S - 2B. P - 2, Q - 3, R - 1, S - 4C. P - 1, Q - 4, R - 2, S - 3D. P - 1, Q - 2, R - 3, S - 4

Answer: P-4, Q-3, R-1, S-2

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**2.** Match the following.

	List-l		List-II
(P)	If the weight of 20 books	1.	48
	is 80 kg, then the weight		
	of 1 book is kg.		
(Q)	The cost of 2 notebooks is	2.	54
	₹ 12, the cost of 8 notebooks		
	is₹		
(R)	The weight of 72 books is	3.	4
	9 kg. Then the weight of		
	160 books is kg.		
<b>(S)</b>	The rent of a cycle for	4.	20
	4 hours is ₹72. Then the		
	rent of the cycle for 3 hours is		
	₹		

A. P-1, Q-3, R-4, S-2

B. P-3, Q-1, R-2, S-4

C. P-3, Q-1, R-4, S-2

D. P-1, Q-3, R-2, S-4

#### Answer: C

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#### **3.** Match the following.

#### List-II List-I (P) If 40 : x = 60 : 45, then value 1. 40 of x is (Q) First three terms of a 2 2 proportion are 15, 20, 30, then its fourth term is (R) Find x, if 14:21 :: x:3 3. 10 30

(S) Find x, if x : 15 :: 4 : 6 4.

A. 
$$P-4, Q-2, R-3, S-1$$

B. P - 1, Q - 2, R - 4, S - 3

C. P - 2, Q - 4, R - 1, S - 3

D. 
$$P - 4, Q - 1, R - 2, S - 3$$

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**Exercise Assertion Reason Type** 

**1.** Assertion : 16:24::20:30 are in proportion.

Reason : If a, b, c, d are in proportion, then a : c = b :

d.

A. If both assertion and reason are true and

reason is the correct explanation of assertion.

B. If both assertion and reason are true but

reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

#### Answer:

**Watch Video Solution** 

**2.** Assertion : The ratio 3 : 2 is same as 2: 3.

Reason : The order in which quantities are taken to

express their ratio is important and should be equal.

A. If both assertion and reason are true and reason is the correct explanation of assertion.B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

#### Answer:

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**3.** Assertion : The ratio 10 : 3 is written as  $\frac{10}{3}$ 

Reason : A ratio is treated as fraction.

A. If both assertion and reason are true and

reason is the correct explanation of assertion.

B. If both assertion and reason are true but

reason is not the correct explanation of

assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.



**4.** Assertion : Suppose the cost of 6 cans is 210. Then cost of 4 such cans is 140.

Reason : Two ratios are equivalent, if the fractions corresponding to them are equivalent.

A. If both assertion and reason are true and

reason is the correct explanation of assertion.

B. If both assertion and reason are true but

reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

#### Answer:

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5. Assertion : If 3, 10, 15, 50 are in proportion, then 3

and 50 are middle terms and 10 and 15 are extreme terms.

Reason : If a, b, c, d are in proportion then a and d

are extreme terms and b and c are middle terms.

A. If both assertion and reason are true and

reason is the correct explanation of assertion.

B. If both assertion and reason are true but

reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

#### Answer:

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**Exercise Comprehension Type** 

**1.** There are 80 persons working in a factory. If the number of males is 35 and the remaining are females, then

Find the ratio of the number of males to number of females.

A. 7: 10 B. 9: 7

**C**. 45:80

D. 7:9



**2.** There are 80 persons working in a factory. If the number of males is 35 and the remaining are females, then

Find the ratio of number of females to number of persons.

A. 16:9

B. 7:9

C. 9:16

D. 10:9

#### **Answer:**



. . . . . .

**3.** There are 80 persons working in a factory. If the number of males is 35 and the remaining are females, then

Find the ratio of number of persons to the number of males.

A. 7: 16 B. 16: 7 C. 9: 16

D. 7:9



**4.** If a, b, c, dare in proportion, then a: b = c: dand written as a: b: :c: d. Find x if 36, 24, x, 16are in proportion.

A. 12

B. 30

C. 24

D. 42



5. If a, b, c, d are in proportion, then a: b = c: d and written as a: b: :c: d.

Which of the following is true?

A. 1:5::15:3

B. 1: 3: :15: 5

C. 3: 5: :1:15

D. 1:5::3:15



6. If a, b, c, dare in proportion, then a:b = c:dand written as a:b::c:d. If 57:x = 51:85, then value of x is A. 95 B. 76 C. 59

D. 96



7. Aman went to a shop. He buys 10 pencils for Rs. 30

and 5 chart papers for Rs. 10.

What is the cost of 5 boxes of such pencils if each

box contains 10 pencils?

A. Rs. 160

B. Rs. 90

C. Rs.150

D. Rs. 130

**Answer:** 

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8. Aman went to a shop. He buys 10 pencils for Rs. 30

and 5 chart papers for Rs. 10.

How much Aman have to pay in total if he bought 3

pencils and 12 chart papers?

A. Rs. 30

B. Rs. 33

C. Rs. 35

D. Rs. 40



9. Aman went to a shop. He buys 10 pencils for Rs. 30

and 5 chart papers for Rs. 10.

If Aman had Rs. 200 and wanted to buy 80 pencils.

How much more money he needed?

A. Rs. 60

B. Rs. 20

C. Rs. 50

D. Rs. 40

#### Answer:

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**1.** Find the ratio of Rs. 100 to 5.

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2. A team won 6 games and lost 3. What is the ratio

of the games won to the games lost?

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**3.** Express the ratio 40 minutes to 60 minutes the simplest form.



**5.** In a college, out of 5000 students 2500 are girls. Find the ratio of number of girls to the number of boys.



6. If the cost of 7 m of cloth is Rs. 364, find the cost

of 1 m of cloth.



**8.** Find the ratio of 400 to 35.

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9. A field is 144 m by 54 m. Find the ratio of length to

its width.



10. Cost of a toffee is Rs. 1 and cost of a chocolate is

Rs. 30. Find the ratio of the cost of a toffee to the

cost of a chocolate.

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**Exercise Subjective Problems Short Answer Type** 

**1.** There are 40 children in a playground. If the number of girls is 25 and the remaining are boys, find the ratio of:

The number of girls to the number of boys.



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**2.** There are 40 children in a playground. If the number of girls is 25 and the remaining are boys, find the ratio of:

The number of boys to the number of children.



**3.** A car travels 150 km in 5 hours. How long will it

take to travel 420 km?



**4.** 10g of caustic soda dissolved in 100mL of water makes a solution of caustic soda. Amount of caustic soda needed for 1 litre of water to make the same type of solution is \_\_\_\_\_.



5. Raj purchases 10 pens for Rs.150 and Rajesh buys 6

for Rs. 84. Who got the cheapest pens?



**6.** In a sports meet, groups of boys and girls are to be formed. Each group consists of 4 boys and 6 girls. How many boys are required, if 102 girls are available for such groupings?



7. David divides his collection of 720 stamps amonghis friends Ravi, Pooja, and Swati, in the ratio 5:4:7.How many stamps did each receive?

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**8.** Find the cost of 8 apples if a dozen costs Rs. 960.

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9. 16 persons consume 40 kg of rice. How much will

10 persons consume?





**10.** A train takes 2 hours to travel from Ajmer to Jaipur, which are 130km apart. How much time will it take to travel from Delhi to Bhopal which are 780km apart if the train is travelling at the uniform speed?

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**Exercise Subjective Problems Long Answer Type** 

1. A man purchased 50 kg of rice at Rs. 760. By selling

5 kg of rice at the same rate, he purchased 10 kg of



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**4.** Are the ratios 50 cm to 5 m and 36 sec to 6 min in proportion? If yes, what are the extreme and middle terms?

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**5.** The ratio of the savings to the expenditure of Gaurav is 7: 6. Find the expenditure if the income is Rs.65,000. Also find the ratio of the savings to the income.

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**1.** If 1:3::x:18 then find the value of x.

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2. The cost of 10 toffees is Rs. 80. What will be the

cost of 8 toffees?

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**3.** The ratio of cows to buffaloes is 5 : 4 in a cowshed.

If the total number of animals is 45, find the

difference between the number of cows and

buffaloes.

• Watch Video Solution
<b>4.</b> Divide 45 between Megha and Sumita in the ratio
1: 14. What is Sumita's share?

5. If the simplest form of the ratio 14: 56 is 1 : y, what

is the value of y?



**6.** Mrs Sharma gives Rs. 35,000 as donation to a school and an orphanage in the ratio 3:4. If the donation given to the orphanage is Rs  $10000 \times k$ . Then find the value of k.

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7. In a rectangle ratio of its length and breadth is 5:3.

If the length is 15 cm, then find the breadth (in cm)

of the rectangle.



8. Weight of 36 bags of rice is 800 kg. How many

bags of rice have a weight 400 kg?



9. In a box containing 20 bulbs, 15 are found defective. The ratio of defective to good bulbs is c:d.Find the value of c + d.

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10. Find the value of (a + b + c) - d, if the following

are in proportion.



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12. Find the value of (a + b + c) - d, if the following

are in proportion.

 $12,\,48,\,c,\,36$ 





13. Find the value of (a + b + c) - d, if the following

are in proportion.

72, 144, 24, d

Watch Video Solution

**Olympaid Hots Corner** 

**1.** If 60 is divided into two parts in the ratio 2 : 3, then the difference between those two parts is

B. 12

C. 5

D. 18

#### **Answer:**



2. If m:n=3:7, then (6m-2n):(5m+3n) is equal to

A. 1:9

B. 2:45

C. 9:18

D.4:12

### Answer:



**3.** A bag contains one rupee, two rupees and 50 paise coins in the ratio 5:6:8. If the total amount is Rs.420, then find the total number of coins.

A. 380

B. 308

C. 418

D. 456

### Answer:



**4.** A bus starts its journey at 5:30 a.m. and reaches its destination at 9:15 p.m. with a stoppage time of 2 hours. Find the ratio of the stoppage time to the total journey period.

A. 12:95

B. 8:63

C. 4:73

D. 9:85

Answer:



5. Which of the following ratios are in proportion?

A. 150g: 350g and 35kg: 210kg

B. Rs60: Rs.120 and Rs. 90: Rs.160

C. 24cm: 15m and 80g: 5kg

D. 3l: 9l and 18ml: 27l

## Answer:



**6.** At present, Kirti is 12 years old and her mother Kamlesh is 42 years old. Find the ratio of the Kamlesh's age two years ago to Kirti's age two years hence.

A. 7:20

B. 20:7

C. 10:3

## Answer:



7. Match the figures given in Column-I with their shaded ratio given in Column-II and select the correct option.

 Column-I
 Column-II

 (P)
 (i)
 3:5 

 (Q)
 (ii)
 7:13 

 (R)
 (iii)
 7:12 

 (s)
 (iv)
 1:2

$$(P) o (iii), (Q) o (iv), (R) o (i), (S) o (ii)$$
B. $(P) o (iv), (Q) o (iii), (R) o (i), (S) o (i)$ C. $(P) o (iv), (Q) o (iv), (R) o (i), (S) o (ii)$ D.

$$(P) 
ightarrow (iii), (Q) 
ightarrow (ii), (R) 
ightarrow (iv), (S) 
ightarrow (i)$$

### **Answer:**

A.



**8.** There are 45 cookies in a box. 27 of them have raisins while the rest are plain. What is the ratio of the number of plain cookies to that of raisin cookies in the box?

- A. 2:3
- B. 3:2
- C. 3:5
- D. 5:3

## Answer:

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**9.** Some apples were distributed amongst Garima and Amit in the ratio 5:7. If Amit got 84 apples, then the difference between the number of apples received by Garima and Amit is

A. 46

B. 32

C. 20

D. 24



**10.** Mr Kapoor left his office at 15:45 to attend a 3 hour seminar in Delhi. He took 2 hours to drive there and then walked for 30 minutes. Find the ratio of time taken to drive to the time taken to walk to the seminar.

A. 1:3

**B**. 3:1

C. 1:4

D.4:1



**11.** The ratio of the quantity of water in Bottle P to the quantity of water in Bottle Q is 3:4. Rajeev drank 40 ml of the water from Bottle P and the ratio then became 13:20. How much water was there in Bottle P at first?

A. 60 ml

B. 80 ml

C. 300 ml

D. 400 ml



**12.** Cost of a toffee is 50 paise and cost of a chocolate is Rs. 10, then the ratio of the cost of toffee to the cost of a chocolate is

A. 5:1

B. 1:20

C.1:5

D. 20:1



13. A total of 700 sweets is to be divided among Sita,

Aman and Karan respectively in the ratio of 1: 2: 4.

How many sweets will Sita get?

A. 100

B. 80

C. 160

D. 280



**14.** The weekly milk order of Aryan's shop includes 40 litres of low-fat milk and 15 litres of chocolate milk. What is the ratio of the quantity of low-fat milk to that of chocolate milk?

A. 3:1

**B**. 5:1

C.5:3

D. 8:3



**15.** In a dam, water level rises 3 metres in  $2\frac{1}{2}$  hours. How much will the water level rise in 114 minutes?

A. 
$$3\frac{1}{2}$$
 cm  
B.  $2\frac{1}{2}$  cm  
C.  $2\frac{1}{4}$  m  
D.  $2\frac{1}{3}$  cm

