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## MATHS

## BOOKS - MTG IIT JEE FOUNDATION

## RATIO AND PROPORTION

## Illustrations

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

- Watch Video Solution

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

What is the ratio of girls to boys?

## - Watch Video Solution

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?

D Watch Video Solution
4. Compare the ratio $3: 5$ and $4: 3$.
5. Give two equivalent ratios of $5: 10$

D Watch Video Solution
6. Divide Rs. 150 between Vidhi and Yashi in the ratio

3:7.
7. Are the following numbers in proportion?

22,33,42,63.

## - Watch Video Solution

8. Are the following numbers in proportion?

15,20,25,30.

## - Watch Video Solution

9. Find x in the following proportions.

$$
x: 3:: 57: 19
$$

10. Find x in the following proportions.

4:5: : $x: 25$

## - Watch Video Solution

11. The ratio of the length and breadth of a tennis ground is 3:2. Find the length if the breadth is 28 metres.
12. 70 students consume 630 kg of wheat in a month.

How many kilograms of wheat is required for 120
students in a month?

## D Watch Video Solution

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

## D Watch Video Solution

2. Express the following ratios in their simplest form
$85: 170$

## - Watch Video Solution

3. Find the ratio of the following:

Rs. 8.40 to Rs. 3.15
4. Find the ratio of the following:
12.80 m to 320 cm

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5. Compare the following:

5:12 and 3:8

- Watch Video Solution


## 6. Compare the following:

## 2:3 and 4:6

## D Watch Video Solution

7. Fill in the blanks :
$\frac{4}{32}=\frac{1}{\square}=\frac{\square}{40}$

## D Watch Video Solution

8. Raj earns Rs $.25,000$ per month and saves Rs. 5000
per month. Find the ratio of
9. Raj earns Rs . 25,000 per month and saves Rs. 5000 per month. Find the ratio of earning to expenditure (per month).

## - Watch Video Solution

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.
$9,21,33, x$

## D Watch Video Solution

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?
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.

## - Watch Video Solution

15. The first second and fourth terms of a proportion are 36,81 and 63 respectively. Find the third term.
16. A shopkeeper buys a dozen mangoes for Rs. 186.00. What is the cost of 23 such mangoes?

## D Watch Video Solution

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.

## - Watch Video Solution

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.

## - Watch Video Solution

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?

D Watch Video Solution
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.

## - Watch Video Solution

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.


- Watch Video Solution

6. See the figure and find the ratio of

Number of squares to all the figures inside the rectangle.


## - Watch Video Solution

7. See the figure and find the ratio of

Number of circles to all the figures inside the
rectangle.


## D Watch Video Solution

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.
9. Fill in the following blanks :
$\frac{15}{18}=\frac{\square}{6}=\frac{10}{\square}=\frac{\square}{30}$

## - Watch Video Solution

10. Find the ratio of the following:

81 to 108

- Watch Video Solution

11. Find the ratio of the following:

98 to 63
12. Find the ratio of the following:

33 km to 121 km

## D Watch Video Solution

13. Find the ratio of the following:

30 minutes to 45 minutes .

D Watch Video Solution
14. Find the ratio of the following:

30 minutes to 1.5 hours
15. Find the ratio of the following:

40 cm to 1.5 m

## - Watch Video Solution

16. Find the ratio of the following:

55 paise to 1
17. Find the ratio of the following:

500 mL to 2 litres

## - Watch Video Solution

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.

## - Watch Video Solution

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

50,000 . Find the ratio of

Money that she saves to the money she spends.

## D Watch Video Solution

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

## - Watch Video Solution

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.

## D Watch Video Solution

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

Find the ratio of

Number of boys to the total number of students.

## Watch Video Solution

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.

## - Watch Video Solution

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.

## - Watch Video Solution

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.

## - Watch Video Solution

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 $3: 2$.

## - Watch Video Solution

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.

## - Watch Video Solution

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.

## - Watch Video Solution

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.

## ( Watch Video Solution

## Ncert Section Exercise 122

1. Determine if the following are in proportion.
$15,45,40,120$
2. Determine if the following are in proportion.

33, 121, 9,96

## - Watch Video Solution

3. Determine if the following are in proportion.
$24,28,36,48$
4. Determine if the following are in proportion. $32,48,70,210$

## - Watch Video Solution

5. Determine if the following are in proportion. $4,6,8,12$

## - Watch Video Solution

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

## - Watch Video Solution

8. Write True (T) or False (F) against each of the following statements :
$21: 6:: 35: 10$
9. Write True (T) or False (F) against each of the following statements :

12:18: : $28: 12$

## - Watch Video Solution

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

8:9::24:27

- Watch Video Solution

11. Write True (T) or False (F) against each of the following statements :
5.2:3.9: : 3: 4

## - Watch Video Solution

12. Write True (T) or False (F) against each of the
following statements :
0.9: 0.36: : 10: 4

- Watch Video Solution

13. Are the following statements true?

40 persons : 200 persons $=$ Rs. $15: 75$

## - Watch Video Solution

14. Are the following statements true?
7.5 litres : 15 litres $=5 \mathrm{~kg}: 10 \mathrm{~kg}$

## - Watch Video Solution

15. Are the following statements true?
$99 \mathrm{~kg}: 45 \mathrm{~kg}=44: 20$
16. Are the following statements true?
$32 \mathrm{~m}: 64 \mathrm{~m}=6 \mathrm{sec}: 12 \mathrm{sec}$

## - Watch Video Solution

17. Are the following statements true?

45 km : $60 \mathrm{~km}=12$ hours : 15 hoursWatch Video Solution
18. Determine if the following ratios form a proportion. Also, write the middle terms and extreme terms where the ratios form a proportion.
(a) $25 \mathrm{~cm}: 1 \mathrm{~m}$ and Rs. 40 : Rs. 160

## D Watch Video Solution

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
20. Determine if the following ratios form a proportion. Also, write the middle terms and extreme terms where the ratios form a proportion.
$2 \mathrm{~kg}: 80 \mathrm{~kg}$ and $25 \mathrm{~g}: 625 \mathrm{~g}$

## - Watch Video Solution

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

200 mL : 2.5 litre and Rs. 4: Rs. 50

## Ncert Section Exercise 123

1. If the cost of 7 m of cloth is Rs 294 , find the cost of 5 m of cloth.

## - Watch Video Solution

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.

- Watch Video Solution

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

What will be the cost of 8 kg of wheat?

D Watch Video Solution
5. Cost of 5 kg of wheat is Rs. 91.50.

What quantity of wheat can be purchased in 183 ?

## - Watch Video Solution

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?

## - Watch Video Solution

8. vi12_34

## D Watch Video Solution

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 ?

## - Watch Video Solution

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?

## D Watch Video Solution

## 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:

## - Watch Video Solution

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

## Answer:

## D Watch Video Solution

3. Weight of 8 bags of sugar is 400 kg . The weight of 30 such bags is $\qquad$
A. 1500 kg
B. 1800 kg
C. 1600 kg
D. 2000 kg

Answer:
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. $5: 3$

Answer:
5. The simplest ratio of 200 g and 1 kg is $\qquad$
A. $1: 3$
B. $3: 1$
C. $11: 5$
D. $1: 5$

Answer:
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

## Answer:

7. The ratio of 240 cm to a metre in the simplest form is expressed as $\qquad$
A. $5: 12$
B. $12: 5$
C. $24: 10$
D. 10: 24

Answer:

## - Watch Video Solution

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:

## - Watch Video Solution

9. If $2,5,8, x$ are in proportion, the value of $x$ is
A. 18
B. 20
C. 12
D. 24

## Answer:

## - Watch Video Solution

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:

## D Watch Video Solution

11. Two equivalent ratio to $3: 4$ are
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:

## - Watch Video Solution

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

## Answer:

## - Watch Video Solution

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
D. 6

## Answer:

## - Watch Video Solution

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:

## - Watch Video Solution

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:

## - Watch Video Solution

16. Reduce $\frac{36}{84}$ in terms of ratio.
A. $7: 3$
B. $12: 17$
C. $3: 7$
D. 9: 4

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:

- Watch Video Solution

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:

## D Watch Video Solution

19. The ratio of 225 ml to 4 litres is $\qquad$
A. 18: 160
B. $160: 9$
C. $9: 160$
D. $3: 20$

## Answer:

## - Watch Video Solution

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:

## D Watch Video Solution

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:

## D Watch Video Solution

22. If the cost of 12 toffees is Rs. 69 then the cost of 1
such toffee is $\qquad$ .
A. 37.55
B. 5.75
C. 35.75
D. 52.75

## Answer:

## - Watch Video Solution

23. A book of 1,456 pages has $9,95,904$ words in it.

The number of words in each page is $\qquad$ .
A. 584
B. 684
C. 675
D. 595

## Answer:

## - Watch Video Solution

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

## Answer:

## - Watch Video Solution

25. If $40: x:: 60: 45$, then value of x is
A. 10
B. 20
C. 30
D. 90

Answer:

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

A. $23: 25$
B. 18: 23
C. 3:5
D. $4: 5$

Answer:

- Watch Video Solution


## 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 isA. 40 cm
B. 50 cm
C. 36 cm
D. 54 cm

## Answer:

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:

- Watch Video Solution

29. The ratio of 1 hour to 360 seconds is
A. $1: 10$
B. $10: 1$
C. 1:5
D. None of these

## Answer:

## - Watch Video Solution

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:

## - Watch Video Solution

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:

## - Watch Video Solution

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:

## - Watch Video Solution

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:

## D Watch Video Solution

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:

## - Watch Video Solution

35. If $5: 6:: 30: x$, then the value of x is
A. 24
B. 12
C. $\frac{3}{2}$
D. 36

## Answer:

## - Watch Video Solution

## Exercise Multiple Choice Questions Level 2

1. A bag contains $50 \mathrm{P}, 25 \mathrm{P}$ 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:

## - Watch Video Solution

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

## Answer:

## - Watch Video Solution

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
D. 64,96

## Answer:

## - Watch Video Solution

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

## Answer:

## - Watch Video Solution

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

## Answer:

## - Watch Video Solution

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

Answer:
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

Answer:

- Watch Video Solution

9. $B$ is a point on line segment $A C$ such that $A B: B C$ is
$3: 2$. If $A C=40 \mathrm{~cm}$, then length of $B C$ is
A. 8 cm
B. 16 cm
C. 24 cm
D. 20 cm

Answer:

- Watch Video Solution


## 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:

11. Which of the following is incorrect?

$$
\begin{aligned}
& \text { A. } 0.6: 0.5=6: 5 \\
& \text { B. } 27: 36=3: 4 \\
& \text { C. } 30: 26=13: 15 \\
& \text { D. } 3: 7=45: 105
\end{aligned}
$$

## Answer:

- Watch Video Solution

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.
A. $3: 5$
B. 5: 3
C. $3: 11$
D. 5: 11

## Answer:

## - Watch Video Solution

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:

## ( Watch Video Solution

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:

## D Watch Video Solution

## Exercise Matching The Following

## 1. Match the following

## List-I

(P) Ratio of 6 days to 2 weeks is $1 . \quad 3: 5$
(Q) Ratio of 9 km to 18 m is
(R) Ratio of 18 mm to 3 cm is 3. $500: 1$
(S) 3 months to 1 year

## List-II

2. $1: 4$
3. $3: 7$

$$
\text { A. } P-4, Q-3, R-1, S-2
$$

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

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

- Watch Video Solution

2. Match the following.
List-I
(P) If the weight of 20 books

## List-II

is 80 kg , then the weight of 1 book is $\qquad$ kg.
(Q) The cost of 2 notebooks is
254
$₹ 12$, the cost of 8 notebooks
is? $\qquad$ .
(R) The weight of 72 books is 3. 4 9 kg . Then the weight of 160 books is $\qquad$ kg.
(S) The rent of a cycle for $\quad$ 4. 20
4 hours is $₹ 72$ Then the rent of the cycle for 3 hours is ₹ $\qquad$ $-$
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

## - Watch Video Solution

3. Match the following.

List-I
(P) If $40: x=60: 45$, then value 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 $14: 21 \approx x: 3$
(S) Find $x$, if $x: 15:: 4: 6$
3. 10
4. 30
A. $P-4, Q-2, R-3, S-1$
B. $P-1, Q-2, R-4, S-3$
C. $P-2, Q-4, R-1, S-3$

$$
\text { D. } P-4, Q-1, R-2, S-3
$$

## Answer:

## - Watch Video Solution

## Exercise Assertion Reason Type

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

Reason : If $\mathrm{a}, \mathrm{b}, \mathrm{c}, \mathrm{d}$ are in proportion, then $\mathrm{a}: \mathrm{c}=\mathrm{b}$ :
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:

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.

## Answer:

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:

## - Watch Video Solution

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:

## D Watch Video Solution

## 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

Answer:
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 $a: b=c: d$ and written as $a: b:: c: d$.

Find x if $36,24, x, 16$ are in proportion.
A. 12
B. 30
C. 24
D. 42

Answer:
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. $1: 5:: 3: 15$

## Answer:

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

If $57: x=51: 85$, then value of x is
A. 95
B. 76
C. 59
D. 96

## Answer:

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:

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

## Answer:

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:

Exercise Subjective Problems Very Short Answer Type

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

## - Watch Video Solution

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

D Watch Video Solution
3. Express the ratio 40 minutes to 60 minutes the simplest form.
4. Fill in the blanks : $\frac{15}{18}=\frac{10}{\square}$

- Watch Video Solution

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.

## D Watch Video Solution

7. Which of the two ratio is greater, $3: 4$ or $3: 10$ ?

- Watch Video Solution

8. Find the ratio of 400 to 35 .

- Watch Video Solution


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

 its width.
## - Watch Video Solution

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.

## D Watch Video Solution

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.

## - Watch Video Solution

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 ?

## - Watch Video Solution

4. 10 g of caustic soda dissolved in 100 mL 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 $\qquad$ .

## - Watch Video Solution

5. Raj purchases 10 pens for Rs. 150 and Rajesh buys 6 for Rs. 84. Who got the cheapest pens?

## - Watch Video Solution

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 among his friends Ravi, Pooja, and Swati, in the ratio 5:4:7. How many stamps did each receive?

## - Watch Video Solution

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

## - Watch Video Solution

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?

## - Watch Video Solution

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
wheat. What is the cost of 13 kg of this wheat?

## - Watch Video Solution

2. Lata earns Rs. 1,44,000 in 1 year.

How much does she earn in 6 months?

## D Watch Video Solution

3. Lata earns Rs. 1,44,000 in 1 year.

In how many years will she earn Rs. $6,00,000$ ?

## - Watch Video Solution

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?

## D Watch Video Solution

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.

## Exercise Integer Numerical Value Type

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

## - Watch Video Solution

2. The cost of 10 toffees is Rs. 80 . What will be the cost of 8 toffees?

## D Watch Video Solution

## 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.

## D Watch Video Solution

4. Divide 45 between Megha and Sumita in the ratio

1: 14 . What is Sumita's share?

## - Watch Video Solution

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 $k$.

## - Watch Video Solution

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 ?

## - Watch Video Solution

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 $\mathrm{c}+\mathrm{d}$.

- Watch Video Solution

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

## - Watch Video Solution

11. Find the value of $(a+b+c)-d$, if the following are in proportion.
$10, b, 24,60$

## D Watch Video Solution

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.
$72,144,24, d$

## 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:

## - Watch Video Solution

2. If $m: n=3: 7$, then $(6 m-2 n):(5 m+3 n)$ is equal to
A. $1: 9$
B. $2: 45$
C. 9: 18
D. $4: 12$

## Answer:

## D Watch Video Solution

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:

## - Watch Video Solution

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:

## D Watch Video Solution

5. Which of the following ratios are in proportion?
A. $150 \mathrm{~g}: 350 \mathrm{~g}$ and $35 \mathrm{~kg}: 210 \mathrm{~kg}$

B. Rs60: Rs. 120 and Rs. $90: R s .160$

C. $24 \mathrm{~cm}: 15 \mathrm{~m}$ and $80 \mathrm{~g}: 5 \mathrm{~kg}$
D. $3 l: 9 l$ and $18 m l: 27 l$

## Answer:

## - Watch Video Solution

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. $10: 3$
D. $3: 10$

## Answer:

## D Watch Video Solution

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

Column-II
(i) $3: 5$
(ii) $7: 13$
(iii) $7: 12$
(iv) $1: 2$
A.

$$
(P) \rightarrow(i i i),(Q) \rightarrow(i v),(R) \rightarrow(i),(S) \rightarrow(i i)
$$

B.

$$
(P) \rightarrow(i v),(Q) \rightarrow(i i i),(R) \rightarrow(i),(S) \rightarrow(i)
$$

C.

$$
(P) \rightarrow(i v),(Q) \rightarrow(i v),(R) \rightarrow(i),(S) \rightarrow(i i)
$$

D.

$$
(P) \rightarrow(i i i),(Q) \rightarrow(i i),(R) \rightarrow(i v),(S) \rightarrow(i)
$$

## Answer:

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:

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

## Answer:

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. $4: 1$

## Answer:

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

## Answer:

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. $20: 1$

## Answer:

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

## Answer:

- Watch Video Solution

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. $8: 3$

## Answer:

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

## Answer:

## - Watch Video Solution

