MATHS

BOOKS - PEARSON IIT JEE FOUNDATION

RATIO AND ITS APPLICATIONS

Example

1. Express 24:36 in its simplest form.

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2. Compare the ratios 2:3 and 4:5.

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3. Express 40% as a fraction.

4. Express 27% as a decimal.

5. Express $\dfrac{1}{4}$ as percent.

6. Find 30% of 90.

7. In a village, 40% of the population comrises of children below 14 years of age. If the ratio of number of men to the number of women is 2:1, then find the number of women in that village, given that the total population of the village is 5000.

8. If cost price of an article is Rs. 80 and its selling price is Rs. 100, then find the profit and profit percentage.

9. Krishna sold, motor bike for Rs. 15000, losing 25%. Find the cost price of motor bike.

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10. A trader allows 20% discount on the marked price of his articles. If the marked price is Rs. 150 and gain per cent is 20%, then find the cost price of each article.

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11. Find the simple interest on Rs. 2560 for 3 years at 15% per annum.

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12. As what rate of per cent, Rs. 1500 amounts to Rs. 2100 in 4 years?

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13. In how many years will a certain sum amounts to 6 times itself at 25% per annum simple interest ?

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14. If 10 persons can make 20 articles in a day, then how many persons are required to make 10 articles in a day?

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15. A pipe can fill an empty tank in 12 min and another pipe can fill it in 24 min. If both the pipes are kept open simulteneously, then in how many minutes will the tank get filled?

16. (a) Express 72 km/h in m/s.

(b) Express 25 m/s in km/h.

17. A man travels 100 in 5 h. If he increases his speed by 5 km/h, then find the time taken by him to travel the same distance.

18. If a train x, 200 m long, crosses a bridge of length 300 m in 30 s, find the speed of the train (in km/h).

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19. A train of length 240 m crosses a platform in 20 s. If the speed of the train is 72 km/h, then find the length of the platform.

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20. Speed of a boat in still water is 10 km/h and the speed of the stream is 5 km/h. Find the total time taken to travel a distance of 20 km upstream and 30 km downstream

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21. A boat travels a distance of 50 km downstream in 5 h and 80 km upstream in 10 h. Find the speed of the boat and speed of the current.

▶ **Watch Video Solution**

22. Express 24:36 in its simplest form.

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23. Compare the ratios 2:8 and 4:16

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24. Express 25% as a fraction.

▶ **Watch Video Solution**

25. Express 74% as a decimal.

▶ **Watch Video Solution**

26. Express $\frac{1}{4}$ as per cent.

▶ **Watch Video Solution**

27. Find 20% of 90.

▶ **Watch Video Solution**

28. In a village, 40% of the population comrises of children below 14 years of age. If the ratio of number of men to the number of women is $2:1$, then find the number of women in that village, given that the total population of the village is 5000.

    A. 1000

    B. 2000

    C. 3000

    D. 4000

Answer: A

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29. If cost price of an article is Rs400 and its selling price is Rs1000, then find profit percentage.

▶ Watch Video Solution

30. Krishna sold, motor bike for Rs. 15000, losing 25%. Find the cost price of motor bike.

▶ Watch Video Solution

31. A trader allows 20% discount on the marked price of his articles. If the marked price is Rs. 150 and gain per cent is 20%, then find the cost price of each article.

▶ Watch Video Solution

32. Find the simple interest on Rs 2500 for 2 years at 15% per annum.

▶ Watch Video Solution

33. As what rate of per cent, Rs. 1500 amounts to Rs. 2100 in 4 years?

▶ Watch Video Solution

34. In how many years will a certain sum amounts to 6 times itself at 25% per annum simple interest ?

▶ Watch Video Solution

35. If 10 persons can make 20 articles in a day, then how many persons are required to make 10 articles in a day?

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36. A pipe can fill an empty tank in 20 min and another pipe can fill it in 60 min. If both the pipes are kept open simultaneously, then in how many minutes will the tank get filled?

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37. Convert 72 km/h into m/s.

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38. Express $\dfrac{5}{3}$ m/s in km/h.

▶ **Watch Video Solution**

39. A man travels 100 in 5 h. If he increases his speed by 5 km/h, then find the time taken by him to travel the same distance.

▶ **Watch Video Solution**

40. If a train x, 200 m long, crosses a bridge of length 300 m in 30 s, find the speed of the train (in km/h).

▶ **Watch Video Solution**

41. A train of length 240 m crosses a platform in 20 s. If the speed of the train is 72 km/h, then find the length of the platform.
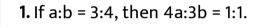
▶ **Watch Video Solution**

42. Speed of a boat in still water is 10 km/h and the speed of the stream is 5 km/h. Find the total time taken to travel a distance of 20 km upstream and 30 km downstream

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43. A boat travels a distance of 50 km downstream in 5 h and 80 km upstream in 10 h. Find the speed of the boat and speed of the current.

Very Short Answer Type Questions

1. If a:b = 3:4, then 4a:3b = 1:1.

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2. Inverse ratio of 5:2 is 2:5.

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3. Simplest form of 24:36 is 4:9.

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4. If $\dfrac{1}{2} : \dfrac{1}{3} : \dfrac{1}{6} = 3 : x$, then $x = 1 : 2$

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5. If $\dfrac{x}{6} = \dfrac{7}{3}$, then $x = 14$.

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6. If 1, 2, 3, and x are in proportion, then x = 1.

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7. The cost of 3 pens is Rs. 30, then the cost of 2 pens is Rs. 20.

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8. If 3 persons can construct x chairs in 6 days, then 6 persons can construct x chairs in 4 days.

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9. If SP = Rs. 22 and CP = Rs. 18, then profit = Rs. 4.

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10. If CP = Rs. 100 and loss = Rs. 20, then SP = Rs. 80.

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11. If interest on Rs. X for 2 years at R% p.a. is Rs. 80, then interest on Rs. 2x for 1 year at R% p.a. is____.

12. Per cent means____.

13. Compound ratio of 2:3 and 3:4 is____.

14. Ratio of 2 rupees 50 paise and 3 rupees 75 paise is ____.

15. The average of 23, 24, 28 and 29 is_____.

16. The ratio of the number of boys and the number of girl in a class is 9:11. If the number of boys is 18, then the number of girls is ____.

17. Mean proportion of 2 and 8 is_____.

18. 50% of 50____.

19. If 25% of x is 100, then x = _____.

20. If a:b = 2:3 and b:c = 3:4, then a:c = _____.

21. 25:30 = ____

A. $4:5$

B. $5:6$

C. $6:5$

D. $6:7$

Answer: B

22. $\dfrac{1}{12} : \dfrac{1}{60} = $ ————

A. $4 : 1$

B. $1 : 4$

C. $5 : 1$

D. $1 : 5$

Answer: C

23. $\dfrac{2}{5}$ as a per cent is ____.

A. 0.3

B. 0.35

C. 0.4

D. 0.45

Answer: C

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24. Write

- 0.8
- 1.25
- 1.2
- 1.3

Answer: B

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25. 12% as a fraction is____.

A. $\dfrac{3}{25}$

B. $\dfrac{4}{25}$

C. $\dfrac{3}{20}$

D. $\dfrac{6}{25}$

Answer: A

26. 1.25% as a fraction is____.

A. $\dfrac{1}{40}$

B. $\dfrac{1}{60}$

C. $\dfrac{1}{80}$

D. $\dfrac{1}{70}$

Answer: C

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27. If CP = Rs. 200 and SP = Rs. 250, then find the profit or loss.

A. Rs. 50 loss

B. Rs. 50 Profit

C. Rs. 25 Profit

D. Rs. 25 loss

Answer: B

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28. If CP = Rs. 120 and SP Rs. 80, find the profit or loss.

A. Rs. 40 loss

B. Rs. 60 loss

C. Rs. 40 profit

D. Rs. 60 profit

Answer: A

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29. Which of the following fractions is equivalent to 25%?

A. $\dfrac{1}{4}$

B. $\dfrac{1}{5}$

C. $\dfrac{1}{3}$

D. $\dfrac{1}{2}$

Answer: A

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30. If $\dfrac{5}{6}$ of 29% of y = 29, then find the value of y.

A. 290

B. 58

C. 120

D. 100

Answer: C

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1. Divide Rs. 175 in the ratio 1:2:4.

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2. Find the fourth proportional of 2,3, and 6.

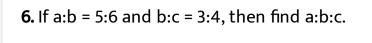**3.** Find the average of 22 kg, 24 kg, 33 kg, 42 kg, and 39 kg.

4. Find the amount .Rs. 2500 for 3 years at 12% per annum.

5. Find the amount when Rs. 3650 for 2 years 6 months at 16% per annum.

6. If a:b = 5:6 and b:c = 3:4, then find a:b:c.

7. The cost of 12 books is Rs. 144. Find the cost of 18 books.

8. Twelve men are required to complete a work in 24 days.How many men are required to complete twice the work in 16 days?

9. In a class, there are 20 boys and 15 girls. What percentage of the number of boys is to the number of girls?

10. By selling a television for Rs. 6600, a trader gains 10%. Find the cost price of the television for the trader.

11. The average height of 20 boys is 120 cm and the average height of 10 girls is 117 cm. Find the average height of these 30 students.

12. A piece of cloth which is 10 m in length is cut into two pieces such that the length of the one piece is equal to one-

fourth the length of the other. Find the lengths of the two pieces.

13. The ratio of the costs of two vehicles is 3:2 and the total cost of the two vehicles is Rs. 50,000. Find the individual costs of the vehicles.

14. If a number is divided into three parts which are in the raio 1:1:2, then what percentage of the total value is the sum of the equal parts?1

15. In a right triangle, the length of the sides is in the ratio 5:4:3. Find the length of individual sides, if the difference between the longest side and the smalles side is 2 cm.

16. The price of a commodity is reduced to its $\frac{5}{6}$ th. What is the percentage reduction in the price ?

17. Find a number such that the ratio of $\frac{5}{2}$ to the number is the same as the ratio of the number to $\frac{5}{8}$.

18. Town A is 200 km for from town B. A person can travel in a car from town A to town B in 4 h. If he travels at a constant speed, then what is the speed of the car (in kmph)?

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19. Ajay's home is 150 m away from a bus stop. At what speed should he travel to reach his house from the bus stop in 2 min?

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20. Find the time taken by a car running at 25 m/s to cover a distance of 360 km (in hours)?

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21. A 200 m long train passes a pole in 20s. What is the speed of the train (in m/s)?

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22. Kiran alone can do a piece of work in 15 days and Aman can do the same in 10 days. If they start working together, in how many days can the work be completed?

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23. If 256 is the third proportional of a and b, where a:b = 3:16, then find the value of a +b.

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24. If $\dfrac{15x + 16y}{25x + 4y} = \dfrac{7}{6}$, then find x:y.

25. If m:n = 3:5 and m:r = 2:3, then find n:r.

26. The present ages of Pawan and Kalyan are in the ratio of 4:5. The product of their ages numerically is equal to 980. Find the differnce between their ages (in years).

27. Aashritha scored 85, 90, 98, 78, 89, and 70 marks in six different subjects. The maximum mark in each subject is 100. Find her average score.

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28. A shop owner sold a sofa set for Rs. 10,000, losing Rs. 2500. Find his loss percentage.

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29. P can do a piece of work in 25 days and Q can do the same work in 15 days. In how many days they can complete the work by working together?

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30. A certain sum becomes doubled in 5 years. Find the rate of interest.

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31. A train crosses a pole in 12 s, when it is traveling at 54 km/h. Find the length of the train.

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32. Calculate the amount of Rs. 2500 at 12% per annum for 8 years under simple interest.

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1. Deepti received Rs500 as pocket money. She bought a new dress using 40% of her pocket money. She bought crackers worth Rs100 and also a gift for her parents with the remaining amount. What was the cost of the gift she bought for her parents?

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2. In a board exam,the pass percentages of a certain school for the past three years are 87%,90% and 92%. If 400 students appear for the exam every year,then how many students have passed the exam in the past three years?

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3. A certain concrete mix needs cement, fine aggregate, and coarse aggregate in the ratio 1:2:4. If the contractor has 25 kg of fine aggregate, how much quantity of the cement and that of the coarse aggregate is required to prepare the mix?

4. The ratio of Ram's savings to his expenditure is 5:2 and that of Manu is 4:3. If Ram's expenditure is $\dfrac{1}{3}$ rd of Manu's expenditure and the sum of their expenditures is Rs3000, then find the salaries of Ram and Manu, respectively.

5. The ratio of the number of boys to that of girls in a school is 3:4. Two-third of the number of boys are cricket players and the rest are football players. One-fourth of the number of girls are badminton players and the rest are handball players. Which game has the greatest number of participants if the total strength of the school is 1400?

6. In an exam, there were 50 questions and each question carries 4 marks. Sahil scored 80% marks in the test. Later 5 questions were proved logically incorrect and the score of each student was calculated out of the rest of the questions. What is Sahil's new score, if he hadn't answered any of the deleted questions?

7. Ramchand took a loan of Rs12,000 from his neighbour and agreed to repay it after 2 years at the rate of 8% per annum, simple interest. At the end of 2 years, his neighbour demanded an interest at the rate of 12%, what is the extra amount paid by the borrower?

8. How much time will a 200m long train running at 15 m/s take to cross a bridge of length 355 m?

9. A farmer can plough a farm in 10 days by working 5 h a day. In how many days can 5 farmers plough 10 such farms working at 5h a day?

10. By working together, A and B can finish a work in 15 days. If B alone can finish the work in 20 days, in how many days can A alone finish the work?

11. A pipe can fill an empty tank in 5 h and there is an emptying pipe which can empty the full tank in 7 h. If both the pipes are

kept open simultaneously, then in how many hours will the tank be filled?

12. A trader marked his articles 20% above cost price. The cost price per article is Rs250. If he allows 10% discount on the marked price, then find his profit percentage.

13. A train of length 120 m, travelling at 30 m/s takes 30 s to overtake another train of length 240 m. If both the trains are travelling in the same direction, then find the speed of the longer train.

14. Two pipes A and B can fill a tank in 5 h and 8h, respectively. Both the pipes are opened simultaneously and pipe B is closed after 1 h. Find the time taken by A to fill the remaining part of the tank.

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15. The present ages of Ram and Sita are in ratio of 5:6. The product of their ages (in years) is 120.

Find the difference in their ages (in years)

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16. Ram can do a work in 20 days. Raj can do $\left(\dfrac{1}{30}\right)$ of a piece of work in a day. In how many days can they do the same work, working together?

17. Find the value of y, if 8:5 = $y^2 : 40 (y > 0)$

18. A train crosses a stationary pole in 20 s when it is travelling at 54 km/h. Find the length of the train (in m).

1. If x:y = 1:1, then $\dfrac{3x + 4y}{5x + 6y}$ = ----.

A. $\dfrac{7}{11}$

B. $\dfrac{17}{11}$

C. $\dfrac{17}{23}$

D. $\dfrac{4}{5}$

Answer: A

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2. If x = 100, then 120% of x =_____.

A. 125

B. 115

C. 110

D. 120

Answer: D

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3. 40% of 150 + 60% of 150 = ____.

A. 200

B. 150

C. 250

D. 180

Answer: B

4. Interest = Amount -____.

A. Principal

B. Profit

C. Loss

D. None of these

Answer: A

5. If a = 2b, then a:b = ____.

A. 2 : 1

B. $1:2$

C. $3:4$

D. $4:3$

Answer: A

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6. If a person travels 60 km in 4 h in a car, then the speed of the car is ___.

A. 12 km/h

B. 15 km/h

C. 20 km/h

D. 24 km/h

Answer: B

7. 1 km/h = ___ m/s.

A. $\dfrac{18}{5}$

B. $\dfrac{10}{17}$

C. $\dfrac{5}{18}$

D. $\dfrac{17}{10}$

Answer: C

8. If a person travels 150 km in 5 h, then he travels 180 km in___h.

    A. 3

    B. 4

    C. 8

    D. 6

Answer: D

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9. Distance covered by a car with 45 km/h in 2 h is___.

    A. 75 km

B. 72 km

C. 45 km

D. 90 km

Answer: D

10. If a train 100 m long takes 10 s to cross a telegraph post, then how much time does it take to cross a bridge of length 100 m (in seconds).

A. 12

B. 15

C. 20

D. 24

Answer: C

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11. If six men can do a piece of work in 6 days, then 3 men can

do same work in 10 days (b) 12 days (c) 15 days (d) 18 days

    A. 10

    B. 12

    C. 15

    D. 18

Answer: B

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12. IF A can do a work in 10 days, then A's one day work is___.

A. $\dfrac{1}{10}$

B. $\dfrac{2}{5}$

C. $\dfrac{3}{7}$

D. $\dfrac{7}{10}$

Answer: A

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13. If B can do three-fourth of a work in 3 days, then the time taken to complete the whole work is ____.

A. 6 days

B. 5 days

C. 4 days

D. 3 days

Answer: C

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14. If A can type 60 letters in a minute and B can type 120 letters in a minute, then both can type_____ letter in a minute.

A. 180

B. 200

C. 220

D. 240

Answer: A

15. If X can do a piece of work in n days, then X's p days' work is____.

A. $\dfrac{n}{p}$

B. $\dfrac{p}{n}$

C. $\dfrac{n}{2p}$

D. pn

Answer: B

16. Find the value of x, if 80:60 = x:12.

A. 16

B. 7

C. 24

D. 50

Answer: A

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17. If $x:y = 2:3$ and $y:z = 2:3$, then $x:z =$ 2:3 (b) 3:4 (c)

5:7 (d) 4:9

A. $2:3$

B. $3:4$

C. $5:7$

D. $4:9$

Answer: D

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18. The cost of 30 mangoes is Rs. 150. What is the cost of 60 mangoes (in Rs)?

A. 400

B. 300

C. 350

D. 500

Answer: B

19. 50% of 150 + 70% of 300 = ___

    A. 295

    B. 285

    C. 265

    D. 275

Answer: B

20. $55\% \ \text{of} \ 1000 \div 60\% \ \text{of} \ 2000 = ?$

    A. $\dfrac{11}{24}$

B. $\dfrac{12}{25}$

C. $\dfrac{13}{24}$

D. $\dfrac{14}{25}$

Answer: A

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21. If x% of 2000 = 600, then find the value of x.

A. 60

B. 30

C. 40

D. 50

Answer: B

22. Which of the following fractions is equivalent to $16.\bar{6}\%$?

A. $\dfrac{1}{6}$

B. $\dfrac{3}{6}$

C. $\dfrac{7}{40}$

D. $\dfrac{8}{60}$

Answer: A

23. Find the value of x, if $4:3 = x^2:12, (x > 0)$.

A. 16

B. 4

C. 9

D. 3

Answer: B

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24. If $\dfrac{2}{5}$ of 50% of x = 10, find x.

A. 100

B. 50

C. 25

D. 80

Answer: B

25. If x% of $\dfrac{12}{5}$ is $\dfrac{18}{25}$, then find x.

A. 30

B. 40

C. 72

D. 50

Answer: A

26. Which of the following fractions is equivalent to 12.5%?

A. $\dfrac{1}{8}$

B. $\dfrac{1}{6}$

C. $\dfrac{1}{5}$

D. $\dfrac{1}{12}$

Answer: A

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27. If $\dfrac{4}{7}$ of 49% of x = 21, then the value of x is ____.

A. 125

B. 98

C. 84

D. 75

Answer: D

28. The following steps are involved in finding the total time taken by both A and B together to complete a work, when A takes 4 days and B takes 12 days to complete the work individually. Arrange them in sequential order.

(A) A and B's 1 day work = $\frac{1}{4} + \frac{1}{12} = \frac{4}{12} = \frac{1}{3}$.

(B) $\therefore$ Both A and B together can complete the entire work in 3 days.

(C) A's 1 day work = $\frac{1}{4}$. B's 1 day work = $\frac{1}{12}$.

   A. ABC

   B. CAB

   C. CBA

   D. ACB

Answer: B

29. The following steps are involved in solving the problem given below. Arrange them in sequential order. "If Arun purchased an article at Rs. 500 and sold at Rs. 750, find the profit/loss percentage."

(A) As $SP > CP$, there is a profit.

(B) Profit % = $\dfrac{\text{Profit}}{CP} \times 100\,\% = \dfrac{250}{750} \times 100\,\%$

(C) Profit = SP-CP = Rs. 750-Rs. 500 = Rs. 250

(D) Given CP = Rs. 500 and SP = Rs. 750

A. DCABE

B. DABCE

C. DCAEB

D. DACBE

Answer: D

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30. The following steps are involved in finding the value of x.y, if

$$\frac{3x + 4y}{2x + 5y} = \frac{4}{3}.$$

Arrange them in sequential order from the first to the last.

(A) 9x + 12 y = 8x + 20y

(B) Given, $\dfrac{3x + 4y}{2x + 5y} = \dfrac{4}{3}$

(C) $\dfrac{x}{y} = 8 \Rightarrow x : y = 8 : 1$

(D) (3x + 4y)3 = (2x + 5y)4

(E) x = 8y

A. BDAEC

B. BDCEA

C. BADEC

D. BADCE

Answer: A

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31. The following steps are involved in finding the simple interest on Rs. 1000 for 3 years at the rate of 15%. Arrange them in sequential order from the first to the last.

(A) $\therefore$ Simple interest (in rupees) $= \dfrac{100 \times 3 \times 15}{100}$

(B) We have I $= \dfrac{PTR}{100}$

(C) $10 \times 3 \times 15 = 450$

A. BCA

B. BAC

C. ABC

D. CBA

Answer: B

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32.

Column A	Column B
If $SP = Rs.\ 120$ and $CP = Rs.\ 100$ then	$(a)2$
If $SP = Rs.\ 75$ and $CP = Rs.\ 100$, then	$(b)5$
If a:b $= 4:3$ and $b:c = 3:2$, then a/c is	(c) Profit is $Rs.\ 20$.
18km/h $=$ ___m/s	(d) Loss is Rs.20.
	(e) Profit % is 25%
	(f) Loss % is 25%

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	Column A	Column B
33.	Six men can do a piece of work in 6 days. Two men can do the work in	$(a)\,5:8$
	If A's 1 day work is 1/6 then A can do the entire work in	$(b)\,8h$
	The simplest form of 60:96 is	$(c)\,6\,\text{days}$
	Time taken to travel 360 km at 45 kmp/h is	$(d)\,10:16$
		$(e)\,18\,\text{days}$
		$(f)\,6\,\text{h}$

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34. If $x:y = 1:3$, then $\dfrac{2x+y}{3x+7y} = $ _____

A. $\dfrac{5}{24}$

B. $\dfrac{17}{11}$

C. $\dfrac{17}{23}$

D. $\dfrac{4}{5}$

Answer: A

35. If x = 100, then 120% of x =_____.

A. 125

B. 115

C. 110

D. 120

Answer: D

36. 40% of 150 + 60% of 150 = ____.

A. 200

B. 150

C. 250

D. 180

Answer: B

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37. Interest = Amount -____.

A. Principal

B. Profit

C. Loss

D. None of these

Answer: A

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38. If a = 2b, then a:b = ____.

A. $2 : 1$

B. $1 : 2$

C. $3 : 4$

D. $4 : 3$

Answer: A

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39. If a person travels 80 km in 4 h in a car, then the speed of the car is _____

  A. 12 km/h

  B. 15 km/h

  C. 20 km/h

  D. 24 km/h

Answer: c

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40. 1 km/h = ___ m/s.

  A. $\dfrac{18}{5}$

B. $\dfrac{10}{17}$

C. $\dfrac{5}{18}$

D. $\dfrac{17}{10}$

Answer: C

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41. If a person travels 150 km in 5 h, then he travels 210 km in____h.

A. 3

B. 4

C. 8

D. 7

Answer: D

42. Distance covered by a car with 50 km/h in 3 h is _____.

A. 75 km

B. 72 km

C. 150 km

D. 90 km

Answer: D

43. If a train 100 m long takes 10 s to cross a telegraph post, then how much time does it take to cross a bridge of length 100 m (in seconds).

A. 12

B. 15

C. 20

D. 24

Answer: C

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44. If six men can do a piece of work in 6 days, then 3 men can do same work in 10 days (b) 12 days (c) 15 days (d) 18 days

A. 10

B. 12

C. 15

D. 18

Answer: B

▶ **Watch Video Solution**

45. IF A can do a work in 10 days, then A's one day work is___.

A. $\dfrac{1}{10}$

B. $\dfrac{2}{5}$

C. $\dfrac{3}{7}$

D. $\dfrac{7}{10}$

Answer: A

46. If B can do three-fourth of a work in 3 days, then the time taken to complete the whole work is ____.

A. 6 days

B. 5 days

C. 4 days

D. 3 days

Answer: C

47. If A can type 60 letters in a minute and B can type 120 letters in a minute, then both can type_____ letter in a minute.

A. 180

B. 200

C. 220

D. 240

Answer: A

▶ **Watch Video Solution**

48. If X can do a piece of work in n days, then X's p days' work is____.

A. $\dfrac{n}{p}$

B. $\dfrac{p}{n}$

C. $\dfrac{n}{2p}$

D. pn

Answer: B

▶ **Watch Video Solution**

49. Find the value of x, if 80:60 = x:12.

A. 16

B. 7

C. 24

D. 50

Answer: A

50. If $x : y = 2 : 3$ $and y : z = 2 : 3$, then $x : z =$ 2:3 (b) 3:4 (c) 5:7 (d) 4:9

A. $2 : 3$

B. $3 : 4$

C. $5 : 7$

D. $4 : 9$

Answer: D

51. The cost of 30 mangoes is Rs150. What is the cost of 60 mangoes (in Rs)?

A. 180

B. 300

C. 350

D. 200

Answer: A

▶ **Watch Video Solution**

52. 50% of 150 + 70% of 300 = ___

A. 295

B. 285

C. 265

D. 275

Answer: B

▶ **Watch Video Solution**

53. 55% of 1000 ÷ 60% of 2000=

(a) $\dfrac{11}{24}$

(b) $\dfrac{12}{25}$

(c) $\dfrac{13}{24}$

(d) $\dfrac{14}{25}$

A. $\dfrac{11}{24}$

B. $\dfrac{12}{25}$

C. $\dfrac{13}{24}$

D. $\dfrac{14}{25}$

Answer: A

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54. If x% of 130 = 39, then find the value of x.

A. 60

B. 30

C. 40

D. 50

Answer: B

▶ **Watch Video Solution**

55. Which of the following fractions is equivalent to $16.\bar{6}\%$?

A. $\dfrac{1}{6}$

B. $\dfrac{3}{6}$

C. $\dfrac{7}{40}$

D. $\dfrac{8}{60}$

Answer: A

▶ Watch Video Solution

56. Find the value of x, if $4:3 = x^2:27.$ $(x > 0)$.

▶ Watch Video Solution

57. If $\dfrac{2}{5}$ of 50% of x = 10, find x.

   A. 100

   B. 50

   C. 25

   D. 80

Answer: B

▶ **Watch Video Solution**

58. If x% of $\dfrac{12}{5}$ is $\dfrac{18}{25}$, then find x.

   A. 30

   B. 40

C. 72

D. 50

Answer: A

▶ **Watch Video Solution**

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59. Which of the following fractions is equivalent to 12.5%?

A. $\dfrac{1}{8}$

B. $\dfrac{1}{6}$

C. $\dfrac{1}{5}$

D. $\dfrac{1}{12}$

Answer: A

▶ **Watch Video Solution**

60. If $\dfrac{4}{7}$ of 49% of x = 21, then the value of x is ____.

A. 125

B. 98

C. 84

D. 75

Answer: D

▶ **Watch Video Solution**

61. The following steps are involved in finding the total time taken by both A and B together to complete a work, when A takes 4 days and B takes 12 days to complete the work

individually. Arrange them in sequential order.

(A) A and B's 1 day work = $\dfrac{1}{4} + \dfrac{1}{12} = \dfrac{4}{12} = \dfrac{1}{3}$.

(B) $\therefore$ Both A and B together can complete the entire work in 3 days.

(C) A's 1 day work = $\dfrac{1}{4}$. B's 1 day work = $\dfrac{1}{12}$.

   A. ABC

   B. CAB

   C. CBA

   D. ACB

Answer: B

62. If Arun purchased an article at Rs500 and sold at Rs750, then find the profit/loss percentage.

63. The following steps are involved in finding the value of x.y, if

$$\frac{3x + 4y}{2x + 5y} = \frac{4}{3}.$$

Arrange them in sequential order from the first to the last.

(A) 9x + 12 y = 8x + 20y

(B) Given, $\dfrac{3x + 4y}{2x + 5y} = \dfrac{4}{3}$

(C) $\dfrac{x}{y} = 8 \Rightarrow x : y = 8 : 1$

(D) (3x + 4y)3 = (2x + 5y)4

(E) x = 8y

    A. BDAEC

B. BDCEA

C. BADEC

D. BADCE

Answer: A

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64. The following steps are involved in finding the simple interest on Rs. 1000 for 3 years at the rate of 15%. Arrange them in sequential order from the first to the last.

(A) $\therefore$ Simple interest (in rupees) $= \dfrac{100 \times 3 \times 15}{100}$

(B) We have I = $\dfrac{PTR}{100}$

(C) $10 \times 3 \times 15 = 450$

A. BCA

B. BAC

C. ABC

D. CBA

Answer: B

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Column A	Column B
32. If $SP = ₹120$ and $CP = ₹100$ then	(a) 2
33. If $SP = ₹75$ and $CP = ₹100$, then	(b) 5
34. If $a:b = 4:3$ and $b:c = 3:2$, then a/c is	(c) Profit is ₹20.

65.

18 km/h = ____ m/s	(d) Loss is ₹20.
	(e) Profit % is 25%.
	(f) Loss % is 25%.

	Column A	Column B
36.	Six men can do a piece of work in 6 days. Two men can do the work in	(a) 5:8
37.	If A's 1 day work is 1/6, then A can do the entire work in	(b) 8 h
38.	The simplest form of 60:96 is	(c) 6 days
39.	Time taken to travel 360 km at 45 kmp/h is	(d) 10:16
		(e) 18 days
66.		(f) 6 h

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Concept Application Level 2

1. The ages of Ram and Shyam are in the ratio 7:6 and the sum of their ages is 78 years. Find the age of Ram and Shyam, respectively (in years).

    A. 36, 43

B. 42, 36

C. 30, 48

D. 40, 38

Answer: b

▶ **Watch Video Solution**

2. If a:b = 2:5, the find the value of $\dfrac{(3a + 2b)}{(4a + b)}$.

A. $\dfrac{16}{13}$

B. $\dfrac{13}{16}$

C. $\dfrac{25}{22}$

D. $\dfrac{20}{21}$

Answer: A

3. Find the third proportional of 3 and 27.

A. 243

B. 256

C. 289

D. 225

Answer: A

4. Anand saves 55% of his income. If his income is Rs. 11000, then find his expenditure (in Rs.)

A. 6050

B. 7450

C. 4950

D. 3550

Answer: C

> ▶ **Watch Video Solution**

5. Rohit scored 180 marks in the first test and 150 marks in the second test. The maximum marks in each test is 200. What is the decrease in his performance in percentage points? 20% (b) 15% 25% (d) 23%

A. 0.2

B. 0.15

C. 0.25

D. 0.23

Answer: B

▶ **Watch Video Solution**

6. 45% of 900 is equal to

▶ **Watch Video Solution**

7. The simple interest for Rs 1500 at 8% per annum for 3 years is Rs 400 (b) Rs 360 Rs 450 (d) Rs 500

A. Rs. 400

B. Rs. 360

C. Rs. 450

D. Rs. 500

Answer: B

▶ **Watch Video Solution**

8. Calculate the amount on Rs. 20000 at 5% per annum for 5 years under simple interest (in Rs.)

A. 5000

B. 25000

C. 24000

D. 20000

Answer: B

9. What distance will a body cover in 20 s travelling at 50 m/s?

A. 700 m

B. 1000 m

C. 1500 m

D. 600 m

Answer: B

10. Twelve persons can do a piece of work in 20 days. How many persons are required to do the same in 24 days?

A. 20

B. 10

C. 15

D. 18

Answer: B

▶ Watch Video Solution

11. Sahil takes 1 h to travel from his house to a market. If his speed is 1.5 m/s, then how far is the market from his house?

A. 6 km

B. 5 km

C. 5.4 km

D. 3 km

Answer: C

---

12. The cost of 30 mangoes is less then cost of 40 mangoes by

Rs 50. Find the cost of 50 mangoes in (Rs) 400 (b) 300 250 (d)

350

A. 400

B. 300

C. 250

D. 350

Answer: C

13. If the simple interest on a certain sum for 2 years at the rate of 5% per annum is Rs 4000, then the sum is

(a) Rs 46,000 (b) Rs 44,000 (c) Rs 40,000 (d) Rs 48,000

A. 46000

B. 44000

C. 40000

D. 48000

Answer: C

14. Nikhil is twice as efficient as Anil Nikhil takes 30 days to complete the work alone, in how many days can Anil finish the work?

    A. 60 days

    B. 30 days

    C. 20 days

    D. 40 days

Answer: A

▶ **Watch Video Solution**

15. A gold smith can make three necklaces in 5 days. How many neckleces can he make in 30 days?

A. 19

B. 18

C. 20

D. 25

Answer: B

▶ **Watch Video Solution**

16. 12. A train of length 200m crosses a platform of length 100m in 12 seconds. Find the speed ofthe train (in m/s)a) 40b) 25d) 18c) 60

A. 40

B. 25

C. 60

D. 18

Answer: B

17. A train travelling at 90 km/h crosses a pole in 8 s. Find the length of the train (in m).

A. 250

B. 200

C. 150

D. 178

Answer: B

18. A can do a piece of work in 16 days and B can do the same work in 20 days. In how many days can they do the same work, working together?

A. $8\dfrac{1}{9}$

B. $9\dfrac{8}{9}$

C. $8\dfrac{8}{9}$

D. $9\dfrac{1}{8}$

Answer: C

19. In how many years will a certain sum become 3 times itself at 25% per annum under simple interest? 5 (b) 8 12 (d) 6

A. 5

B. 8

C. 12

D. 6

Answer: B

▶ Watch Video Solution

20. Calculate the amount on Rs. 25000 at 8% per annum for 6 years under simple interest.

A. Rs. 35000

B. Rs. 37000

C. Rs. 45000

D. Rs. 47000

Answer: B

▶ **Watch Video Solution**

21. A trader purchased a bicycle for Rs 2500 and sold at Rs 2700. His profit percentage is 8% (b) 10% 6 % (d) 4%

A. 0.08

B. 0.1

C. 0.06

D. 0.04

Answer: A

22. Akhil scored 62, 70, 56, 85, 77, and 70 marks in six different subjects. The maximum mark in each subject is 100. Find his average score.

A. 68

B. 65

C. 78

D. 70

Answer: D

23. If $\dfrac{25p + 14q}{5p + 7q} = \dfrac{8}{3}$ then find p:q.

A. $3:5$

B. $2:3$

C. $2:5$

D. $5:4$

Answer: C

▶ **Watch Video Solution**

24. The present ages of Renu and Ravi are in the ratio $5:6$. The sum of their present ages is 44 in years. The difference of their ages (in years) is 4 (b) 5 8 (d) 2

A. 4

B. 5

C. 8

D. 2

Answer: A

> ▶ **Watch Video Solution**

25. If 343 is the third proportional of a and b, where a:b = 1:7, then find the value of a + b.

A. 14

B. 24

C. 56

D. 63

Answer: C

---

26. If a:b = 4:5 and b:c = 2:3, then a:c=_____.

A. $4 : 3$

B. $8 : 15$

C. $8 : 9$

D. $5 : 3$

Answer: B

27. The ages of Ram and Shyam are in the ratio 7:6 and the sum of their ages is 78 years. Find the age of Ram and Shyam, respectively (in years).

    A. 36, 43

    B. 42, 36

    C. 30, 48

    D. 40, 38

Answer: B

▶ **Watch Video Solution**

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28. If a:b = 3:4, then find the value of $\dfrac{(3a + 2b)}{(4a + b)}$

▶ **Watch Video Solution**

29. Find the third proportional of 3 and 27.

A. 243

B. 256

C. 289

D. 225

Answer: A

▶ **Watch Video Solution**

30. Anand saves 55% of his income. If his income is Rs. 11000, then find his expenditure (in Rs.)

A. 6050

B. 7450

C. 4950

D. 3550

Answer: C

▶ **Watch Video Solution**

31. Rohit scored 180 marks in the first test and 150 marks in the second test. The maximum marks in each test is 200. What is the decrease in his performance in percentage points?

(a) 20%

(b) 15%

(c) 25%

(d) 23%

A. 20 %

B. 15 %

C. 25 %

D. 23 %

Answer: B

▶ **Watch Video Solution**

32. The kinetic energy of a body decreases by $19\,\%$. What is the percentage decrease in its momentum?

A. 15 %

B. $13\dfrac{1}{3}\,\%$

C. 20 %

D. $16\dfrac{2}{3}\%$

Answer: D

> ▶ **Watch Video Solution**

33. Find the simple interest for Rs1500 at 8% per annum for 3 years.

    A. Rs400

    B. Rs360

    C. Rs450

    D. Rs500

Answer: B

> ▶ **Watch Video Solution**

34. Calculate the amount on Rs25000 at 5% per annum for 4 years under simple interest (in Rs).

▶ **Watch Video Solution**

35. What distance will a body cover in 10 s travelling at 80 m/s?

▶ **Watch Video Solution**

36. Twelve persons can do a piece of work in days. How many persons are required to do the same in 24 days?

A. 20

B. 10

C. 15

D. 18

Answer: B

▶ Watch Video Solution

---

37. Sahil takes 1 h to travel from his house to a market. If his speed is 1.5 m/s, then how far is the market from his house?

A. 6 km

B. 5 km

C. 5.4 km

D. 3 km

Answer: C

38. The cost of 30 mangoes is less then cost of 40 mangoes by

Rs 50. Find the cost of 50 mangoes in (Rs) 400 (b) 300 250 (d)

350

A. 400

B. 300

C. 250

D. 350

Answer: C

39. If the simple interest on a certain sum for 3 years at the rate of 4% per annum is Rs5000, then find the sum (inRs).

40. Nikhil is twice as efficient as Anil Nikhil takes 30 days to complete the work alone, in how many days can Anil finish the work?

A. 60 days

B. 30 days

C. 20 days

D. 40 days

Answer: A

41. A gold smith can make three necklaces in 5 days.

How many neckleces can he make in 30 days?
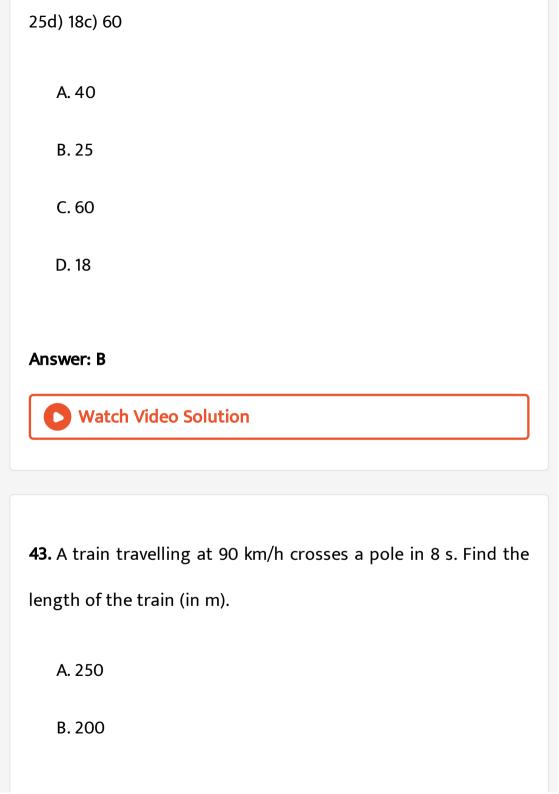
A. 19

B. 18

C. 20

D. 25

Answer: B

42. 12. A train of length 200m crosses a platform of length 100m in 12 seconds. Find the speed ofthe train (in m/s)a) 40b)

25d) 18c) 60

A. 40

B. 25

C. 60

D. 18

Answer: B

▶ **Watch Video Solution**

43. A train travelling at 90 km/h crosses a pole in 8 s. Find the length of the train (in m).

A. 250

B. 200

C. 150

D. 178

Answer: B

44. A can do a piece of work in 16 days and B can do the same work in 20 days. In how many days can they do the same work, working together?

A. $8\dfrac{1}{9}$

B. $9\dfrac{8}{9}$

C. $8\dfrac{8}{9}$

D. $9\dfrac{1}{8}$

Answer: C

45. In how many years will a certain sum become 3 times itself at 25% per annum under simple interest? 5 (b) 8 12 (d) 6

A. 5

B. 8

C. 12

D. 6

Answer: B

46. Calculate the amount on Rs. 25000 at 8% per annum for 6 years under simple interest.

   A. Rs35000

   B. Rs37000

   C. Rs45000

   D. Rs47000

Answer: B

▶ **Watch Video Solution**

47. A trader purchased a bicycle for Rs1500 and sold at Rs2000. Find his profit percentage.

▶ **Watch Video Solution**

48. Akhil scored 62, 70, 56, 85, 77, and 70 marks in six different subjects. The maximum mark in each subject is 100. Find his average score.

A. 68

B. 65

C. 78

D. 70

Answer: D

▶ **Watch Video Solution**

49. If $\dfrac{25p + 14q}{5p + 7q} = \dfrac{8}{3}$ then find p:q.

A. $3:5$

B. $2:3$

C. $2:5$

D. $5:4$

Answer: C

▶ **Watch Video Solution**

50. The present ages of Renu and Ravi are in the ratio $5:6$. The sum of their present ages is 44 in years. The difference of their ages (in years) is

(a) 4

(b) 5

(c) 8

(d) 2

A. 4

B. 5

C. 8

D. 2

Answer: A

▶ **Watch Video Solution**

51. If 343 is the third proportional of a and b, where a:b = 1:7, then find the value of a + b.

A. 14

B. 24

C. 56

D. 63

Answer: C

▶ **Watch Video Solution**

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52. If a:b = 4:5 and b:c = 2:3, then a:c=_____.

A. $4 : 3$

B. $8 : 15$

C. $8 : 9$

D. $5 : 3$

Answer: B

▶ **Watch Video Solution**

1. A varies directly with B when C is constant and inversly with C when B is constant . A=6, when B=2 and C=3. What is the value of A, when B=3 and C=18?

A. $\dfrac{1}{2}$

B. $\dfrac{5}{2}$

C. $\dfrac{3}{2}$

D. $\dfrac{7}{2}$

Answer: C

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2. The mean proportional of a and b is 10 and the value of a is four times the value of b. the value of $a + b(a > 0, b > 0)$ is 20 (b) 25 101 (d) 29

A. 20

B. 25

C. 101

D. 29

Answer: B

▶ **Watch Video Solution**

3. If $\dfrac{30x + 2y}{4x + y} = \dfrac{16}{3}$, then find x:y.

A. $7 : 13$

B. $6 : 13$

C. $5 : 13$

D. $4 : 13$

Answer: C

▶ **Watch Video Solution**

4. If 243 is the third proportional of a and b, where b:a = 9:1, then find the value of a and b.

A. 3, 27

B. 2, 18

C. 4, 36

D. 1, 9

Answer: A

5. The difference between the interest obtained for Rs 1000 at 12% per annum for 3 years and that for Rs 1500 at 8% per annum for $1\frac{1}{2}$ years is Rs 360 (b) Rs 300 Rs 180 (d) Rs 200

A. 360

B. 300

C. 180

D. 200

Answer: C

6. Which of the following yields maximum interest for 2 years?

A. Rs. 1500 at 8% per annum

B. Rs. 1000 at 11% per annum

C. Rs. 2000 at 5% per annum

D. Rs. 900 at 20% per annum

Answer: D

▶ **Watch Video Solution**

7. The present ages for Seeta and Geeta are in the ratio 3:4. The product of their ages (in years) is 48. Find the sum of their ages (in years).

A. 7

B. 21

C. 14

D. 28

Answer: C

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8. A shopkeeper bougth 10 kg of rice for Rs. 200, 5 kg of rice at Rs. 15 per kg, and 5 kg at Rs. 25 per kg. Find the average costof the rice per kg.

A. Rs. 25

B. Rs. 15

C. Rs. 10

D. Rs. 20

Answer: D

▶ **Watch Video Solution**

9. Amit scored 50, 60, 45, 80, and 75 marks in five different subjects. The maximum mark in each subject is 100. Find his average percentage of marks.

A. 0.6

B. 0.63

C. 0.62

D. 0.65

Answer: C

10. In an office, one day, 20% of the staff members were on leave in the morning session. On that same day, 10% of the staff, who were on leave, came for the afternoon session. If total strength of the office is 400, then how many were present for the evening session? (The persons who were present in the morning session were also present in the afternoon session)

A. 360

B. 380

C. 364

D. 328

Answer: D

11. If $\dfrac{a}{b} = \dfrac{x}{y} = \dfrac{p}{q}$ then $\dfrac{6a + 9x + 2p}{6b + 9y + 2q} =$

A. $\dfrac{a}{b}$

B. $\dfrac{x}{y}$

C. $\dfrac{p}{q}$

D. All of these

Answer: D

12. The income of a person A increases from Rs. 12,000 to Rs. 14,000 and the expenditure increases from 40% to 50%. Find

the percentage increase or decrease in the monthly savings of A.

A. $2\frac{7}{9}$ % increase

B. $2\frac{7}{9}$ % decrease

C. 3% increase

D. 3% decrease

Answer: B

▶ **Watch Video Solution**

13. Twelve persons can make 360 toys in 8 days. If three more persons join them, then how many toys can be made in 8 days?

A. 370

B. 369

C. 450

D. 359

Answer: C

▶ **Watch Video Solution**

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14. In how many years will a certain sum becomes five times itself at 20% per annum simple interest?

A. 20

B. 18

C. 16

D. 12

Answer: A

15. A can do $\dfrac{1}{10}$ th of a piece of work in a day. B can do the same work in 15 days. In how many days can they do the same work, working together?

A. 5

B. 6

C. 8

D. 9

Answer: B

16. X can construct a wall in 2 days. Y can construct it in 3 days

and Z can construct it in 4 days. If they construct the wall,

working together and receive an amount of Rs. 11700, then find

the share of Y.

A. Rs. 3900

B. Rs. 3800

C. Rs. 3700

D. Rs. 3600

Answer: D

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17. Two pipes P_1 and P_2 can fill a tank in 8 h and 5 h, respectively. They are opened together, after an hour, pipe P_2 is closed, in how many more hours will the tank be filled?

A. $\dfrac{27}{5}h$

B. $\dfrac{27}{2}h$

C. $\dfrac{23}{5}h$

D. $\dfrac{28}{5}h$

Answer: A

▶ **View Text Solution**

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18. A pipe can fill an empty tank in 8 h. After it is kept open for 2 h, another pipe which can fill the tank in 6 h is opened. In how

many more hours will the tank be filled?

A. $\dfrac{18}{7}h$

B. $\dfrac{19}{7}h$

C. $\dfrac{19}{9}h$

D. $\dfrac{18}{8}h$

Answer: A

▶ View Text Solution

19. Raj travels a distance of one kilometre at a speed of 1 m/s and 4 km at a speed of 30 km/h. Find the total time taken to cover the entire distance (in seconds).

A. 1480

B. 900

C. 950

D. 1050

Answer: A

▶ **Watch Video Solution**

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20. Teena takes 12 h to go from her city to another city by train.

If she goes by car, whose speed is 1.5 times that of the train,

then how much time will she take to cover the same distance?

A. 8 h

B. 6 h

C. 9 h

D. 10 h

Answer: A

> ▶ **View Text Solution**

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21. Mohan takes 15 min to go a market and 200s to go to a bus stop travelling at the same speed. What is the ratio of distances in two cases?

A. $4.5 : 1$

B. $5 : 1$

C. $1 : 4.5$

D. $4.5 : 6$

Answer: A

22. A train crosses a post in 10 s when it is travelling at 72 km/h. Find the length of the train (in m).

A. 100 m

B. 200 m

C. 300 m

D. 150 m

Answer: B

23. A 150 m long train crosses a platform in 15s. What is the length of the platform if the speed of the train is 90 km/h?

A. 225 m

B. 300 m

C. 200 m

D. 250 m

Answer: A

▶ **Watch Video Solution**

24. A train overtakes a person walking at 1 m/s in 5 s.

If the speed of the train is 65 m/s, then what is the length of the train?

A. 300 m

B. 320 m

C. 400 m

D. 400 m

Answer: B

▶ **Watch Video Solution**

25. Two trains travelling in opposite direction at 60 kmph and 50 kmph crossed each other in 9 s. If the train which is travelling at 60 kmph crossed a pole in 6s, then find the length of the train which is travelling at 50 kmph.

A. 130 m

B. 160 m

C. 175 m

D. 200 m

Answer: C

▶ **View Text Solution**

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26. Two trains are travelling in opposite direction at 72 km/h and 90 km/h. They cross each in 16s. If the length of the slower trains is 320 m, then find the length of the faster train (in m).

A. 380

B. 420

C. 400

D. 425

Answer: C

27. Two pipes P_1 and P_2 can fill a tank in 6 h and 3 h, respectively. Both the pipes are opened simultaneously and pipe P_1 is closed after 1 h.. Find the time taken by P_2 to fill the remaining par of the tank (in hours).

A. 1

B. $1\dfrac{1}{2}$

C. 2

D. $2\dfrac{1}{2}$

Answer: B

28. In a class, there are 30 boys and 20 girls. The average weight of 30 boys is 60 kg and average weight of 20 girls is 35 kg. Find the average weight of the class.

A. 40 kg

B. 50 kg

C. 60 kg

D. 45 kg

Answer: B

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29. Radha takes 4 h to travel from her village to her friends's city by bus. If she goes by car, whose speed is $\frac{2}{3}$ times that of the bus, then how much time will she take to cover the same distance?

A. 3 h

B. 8 h

C. 12 h

D. 6 h

Answer: D

▶ View Text Solution

30. A pipe can fill an empty tank in 12 h. After it is kept open for 3 h, another pipe which can fill the tank in 8 h is opened. In how many more hours will the tank be filled?

A. $\dfrac{17}{7}h$

B. $\dfrac{18}{5}h$

C. $\dfrac{20}{9}h$

D. $\dfrac{16}{5}h$

Answer: B

▶ **View Text Solution**

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31. A varies directly with B when C is constant and inversly with C when B is constant . A=6, when B=2 and C=3. What is the value

of A, when B=3 and C=18?

A. $\dfrac{1}{2}$

B. $\dfrac{5}{2}$

C. $\dfrac{3}{2}$

D. $\dfrac{7}{2}$

Answer: C

▶ **Watch Video Solution**

32. The mean proportional of $a \; and \; b$ is 10 and the value of a is four times the value of $b.$ the value of $a + b(a > 0, b > 0)$ is 20 (b) 25 101 (d) 29

A. 20

B. 25

C. 101

D. 29

Answer: B

▶ **Watch Video Solution**

33. If $\dfrac{3x + 2y}{x + 7y} = \dfrac{1}{3}$, then find x:y.

▶ **Watch Video Solution**

34. If 243 is the third proportional of a and b, where b:a = 9:1, then find the value of a and b.

A. 3,27

B. 2, 18

C. 4, 36

D. 1,9

Answer: A

35. The difference between the interest obtained for Rs 1000 at

12% per annum for 3 years and that for Rs 1500 at 8% per

annum for $1\frac{1}{2}$ years is Rs 360 (b) Rs 300 Rs 180 (d) Rs 200

A. 360

B. 300

C. 180

D. 200

Answer: C

> ▶ **Watch Video Solution**

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36. Which of the following yields maximum interest for 2 years?

A. Rs1500 at 8% per annum

B. Rs1000 at 11% per annum

C. Rs2000 at 5% per annum

D. Rs900 at 20% per annum

Answer: D

> ▶ **Watch Video Solution**

37. The present ages for Seeta and Geeta are in the ratio 3:4. The product of their ages (in years) is 48. Find the sum of their ages (in years).

    A. 7

    B. 21

    C. 14

    D. 28

Answer: C

▶ **Watch Video Solution**

38. A shopkeeper bougth 10 kg of rice for Rs. 200, 5 kg of rice at Rs. 15 per kg, and 5 kg at Rs. 25 per kg. Find the average costof

the rice per kg.

A. Rs25

B. Rs15

C. Rs15

D. Rs20

Answer: D

▶ **Watch Video Solution**

39. Amit scored 50, 60, 45, 80, and 75 marks in five different subjects. The maximum mark in each subject is 100. Find his average percentage of marks.

A. 60 %

B. 63 %

C. 62 %

D. 65 %

Answer: C

▶ **Watch Video Solution**

40. In an office, one day, 20% of the staff members were on leave in the morning session. On that same day, 10% of the staff, who were on leave, came for the afternoon session. If total strength of the office is 400, then how many were present for the evening session? (The persons who were present in the morning session were also present in the afternoon session)

A. 360

B. 380

C. 364

D. 328

Answer: D

▶ **Watch Video Solution**

41. If $\dfrac{a}{b} = \dfrac{x}{y} = \dfrac{p}{q}$ then $\dfrac{6a + 9x + 2p}{6b + 9y + 2q} =$

A. $\dfrac{a}{b}$

B. $\dfrac{x}{y}$

C. $\dfrac{p}{q}$

D. All of these

Answer: D

42. The income of a person A increases from Rs. 12,000 to Rs. 14,000 and the expenditure increases from 40% to 50%. Find the percentage increase or decrease in the monthly savings of A.

A. $2\dfrac{7}{9}\%$ increase

B. $2\dfrac{7}{9}\%$ decrease

C. 3% increase

D. 3% decrease

Answer: B

43. Twelve persons can make 360 toys in 8 days. If three more persons join them, then how many toys can be made in 8 days?

A. 370

B. 369

C. 450

D. 359

Answer: C

▶ **Watch Video Solution**

44. In how many years will a certain sum becomes five times itself at 20% per annum simple interest?

A. 20

B. 18

C. 16

D. 12

Answer: A

▶ **Watch Video Solution**

45. A can do $\dfrac{1}{10}$ th of a piece of work in a day. B can do the same work in 15 days. In how many days can they do the same work, working together?

A. 5

B. 6

C. 8

D. 9

Answer: B

 Watch Video Solution

46. X can construct a wall in 2 days. Y can construct it in 3 days and Z can construct it in 4 days. If they construct the wall, working together and receive an amount of Rs. 11700, then find the share of Y.

A. Rs3900

B. Rs3800

C. Rs3700

D. Rs3600

Answer: D

47. Two pipes P_1 and P_2 can fill a tank in 8 h and 5 h, respectively. They are opened together, after an hour, pipe P_2 is closed, in how many more hours will the tank be filled?

A. $\dfrac{27}{5} h$

B. $\dfrac{27}{2} h$

C. $\dfrac{23}{5} h$

D. $\dfrac{28}{5} h$

Answer: A

48. A pipe can fill an empty tank in 8 h. After it is kept open for 2 h, another pipe which can fill the tank in 6 h is opened. In how many more hours will the tank be filled?

A. $\dfrac{18}{7}h$

B. $\dfrac{19}{7}h$

C. $\dfrac{19}{9}h$

D. $\dfrac{18}{8}h$

Answer: A

49. Raj travels a distance of one kilometre at a speed of 1 m/s and 4 km at a speed of 30 km/h. Find the total time taken to

cover the entire distance (in seconds).

A. 1480

B. 900

C. 950

D. 1050

Answer: A

▶ **Watch Video Solution**

50. Teena takes 12 h to go from her city to another city by train.

If she goes by car, whose speed is 1.5 times that of the train,

then how much time will she take to cover the same distance?

A. 8 h

B. 6 h

C. 9 h

D. 10 h

Answer: A

▶ **Watch Video Solution**

51. Mohan takes 15 min to go to a market and 200 s to go to a bus stop travelling at the same speed. What is the ratio of distances in two cases?

A. $4.5 : 1$

B. $5 : 1$

C. $1 : 4.5$

D. $4.5 : 6$

Answer: A

▶ **Watch Video Solution**

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52. A train crosses a post in 10 s when it is travelling at 72 km/h. Find the length of the train (in m).

A. 100 m

B. 200 m

C. 300 m

D. 150 m

Answer: B

▶ **Watch Video Solution**

53. A 150 m long train crosses a platform in 15s. What is the length of the platform if the speed of the train is 90 km/h?

A. 225 m

B. 300 m

C. 200 m

D. 250 m

Answer: A

▶ **Watch Video Solution**

54. A train overtakes a person walking at 1 m/s in 5 s.

If the speed of the train is 65 m/s, then what is the length of

the train?

A. 300 m

B. 320 m

C. 400 m

D. 420 m

Answer: B

▶ **Watch Video Solution**

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55. Two trains travelling in opposite direction at 60 kmph and 50 kmph crossed each other in 9 s. If the train which is travelling at 60 kmph crossed a pole in 6 s, then find the length of the train which is travelling at 50 kmph.

A. 130 m

B. 160 m

C. 175 m

D. 200 m

Answer: C

 Watch Video Solution

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56. Two trains are travelling in the same direction at 22.5 km/h and 7.5 km/h respectively. The faster train crosses a man in the slower train in 18 seconds. What is length of the faster train?

A. 380

B. 420

C. 400

D. 425

Answer: C

> ▶ Watch Video Solution

57. Two pipes A and B can fill a tank in 6 hours and 3 hours respectively. Both the pipes are opened simultaneously and pipe A is closed after 1 hours.Find the time taken by B to fill the remaining part of the tank (in hours).

A. 1

B. $1\dfrac{1}{2}$

C. 2

D. $2\dfrac{1}{2}$

Answer: B

---

58. In a class, there are 30 boys and 20 girls. The average weight of 30 boys is 60 kg and average weight of 20 girls is 35 kg. Find the average weight of the class.

A. 40 kg

B. 50 kg

C. 60 kg

D. 45 kg

Answer: B

59. Radha takes 4 h to travel from her village to her friend's city by bus. If she goes by car, whose speed is $\frac{2}{3}$ times that of the bus, then how much time3 will she take to cover the same distance?

A. 3 h

B. 8 h

C. 12 h

D. 6 h

Answer: D

▶ Watch Video Solution

60. A pipe can fill an empty tank in 12 h. After it is kept open for 3 h, another pipe which can fill the tank in 8 h is opened. In how many more hours will the tank be filled?

A. $\dfrac{17}{7}h$

B. $\dfrac{18}{5}h$

C. $\dfrac{20}{9}h$

D. $\dfrac{16}{5}h$

Answer: B

▶ Watch Video Solution

Assessment Tests Test 1

1. The ages of A and B are in the ratio 5:4 and the difference of their ages is 10 years. Find the ratio of their ages 8 years before.

The following steps are involved in solving the above problem. Arrange them in sequential order.

(A) Let the age of A be 5x years and the age of B be 4x years.

(B) 8 years ago, A's age was 42 years and B's age was 32 years. The required ratio = 42:32 = 21:16.

(C) 5x-4x = 10 $\Rightarrow x = 10$

(D) A's age = 5x = $5 \times 10 = 50$ years and B's age = $4x = 4 \times 10 = 40$ "years"

   A. ACDB

   B. ABCD

   C. BCDA

D. ADCB

Answer: A

▶ **View Text Solution**

2. The following steps are involved in finding the value of x

from 4:(x-2) = (x + 2):8.

Arrrange them in sequential order.

(A) 4:(x - 2) = (x + 2):8 $\Rightarrow (x - 2)(x + 2) = 32$

(B) $x^2 = 36$

(C) $x^2 - 4 = 32$

(D) $x = \pm 6$

A. ABCD

B. ACBD

C. ACDB

D. ADBC

Answer: B

▶ **View Text Solution**

3. Find the value fo x:y, if $\dfrac{7x - 15y}{4x + 6y} = \dfrac{5}{6}$.

A. $60 : 11$

B. $30 : 11$

C. $27 : 13$

D. $17 : 13$

Answer: A

▶ **Watch Video Solution**

4. The value of 30% of 60% of 200 is____.

A. 23

B. 24

C. 18

D. 36

Answer: D

▶ **Watch Video Solution**

5. The fourth proportional of 9, 8, and 18 is____.

A. 16

B. 9

C. 72

D. None of these

Answer: A

▶ **Watch Video Solution**

6. The mean proportional of 27 and 3 is____.

A. 6

B. 3

C. 9

D. 27

Answer: C

7. Which of the following is equivalent to $3.\overline{6}\%$?

A. $\dfrac{11}{100}$

B. $\dfrac{11}{300}$

C. $\dfrac{22}{100}$

D. $\dfrac{36}{100}$

Answer: B

8. What distance (in m) will a train cover in 2 min travelling at 108 km/h?

A. 3600

B. 360

C. 306

D. 1800

Answer: A

▶ **Watch Video Solution**

9. If a sum of Rs 3000 is lent out at 3% per annum for 20 years

under simple interest, then the amount at the end of 20th year

is Rs 1800 (b) Rs 1080 Rs 3600 (d) Rs 4800

A. 1800

B. 1080

C. 3600

D. 4800

Answer: D

▶ **Watch Video Solution**

10. If the cost of 25 pencils is Rs. 75, then what is the cost of 75 pencils (in Rs)?

A. 225

B. 150

C. 180

D. 100

Answer: A

11. Sixteen men, working at 6 h a day, can do a piece of work in 15 days. In how many days can 18 men working at 10 h a day do the same work?

    A. 18

    B. 10

    C. 16

    D. 8

Answer: D

12.

Column A	Column B
The average of the sum of the square of the first five natural numbers is	$(a)5:1$
If$x = 5y$, then $x:y$ is	$(b)20\%$
The cost price of an article is Rs. 200 and its selling price is Rs. 180. Find the loss percentage.	$(c)10\%$
At what rate of interest will Rs. 250 amount to triple its present value in 10 years at simple interest$(\text{p.a})\%$	$(d)11$
	$(e)1:5$
	$(f)15\%$
	$(g)10$

▶ View Text Solution

13. The ages of A and B are in the ratio 5:4 and the difference of their ages is 10 years. Find the ratio of their ages 8 years before.

▶ Watch Video Solution

14. Find the value of x, 4:(x - 2) = (x + 2):8.

15. Find the value fo x:y, if $\dfrac{7x - 15y}{4x + 6y} = \dfrac{5}{6}$.

    A. $60 : 11$

    B. $30 : 11$

    C. $27 : 13$

    D. $17 : 13$

Answer: A

16. The value of 30% of 60% of 200 is____.

A. 23

B. 24

C. 18

D. 36

Answer: D

▶ **Watch Video Solution**

17. The fourth proportional of 9, 8, and 18 is____.

A. 16

B. 9

C. 72

D. None of these

Answer: A

▶ **Watch Video Solution**

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18. The mean proportional of 27 and 3 is____.

A. 6

B. 3

C. 9

D. 27

Answer: C

▶ **Watch Video Solution**

19. Which of the following is equivalent to 3.6 %?

A. $\dfrac{11}{100}$

B. $\dfrac{36}{1000}$

C. $\dfrac{22}{100}$

D. $\dfrac{36}{100}$

Answer: B

▶ **Watch Video Solution**

20. What distance (in m) will a train cover in 2 min travelling at 108 km/h?

A. 3600

B. 360

C. 306

D. 1800

Answer: A

▶ **Watch Video Solution**

21. If a sum of Rs 3000 is lent out at 3% per annum for 20 years under simple interest, then the amount at the end of 20th year is Rs 1800 (b) Rs 1080 Rs 3600 (d) Rs 4800

A. 1800

B. 1080

C. 3600

D. 4800

Answer: D

22. If the cost of 25 pencils is Rs. 75, then what is the cost of 75

pencils (in Rs)?

A. 225

B. 150

C. 180

D. 100

Answer: A

23. Sixteen men, working at 6 h a day, can do a piece of work in 15 days. In how many days can 18 men working at 10 h a day do the same work?

A. 18

B. 10

C. 16

D. 8

Answer: D

▶ **Watch Video Solution**

Column A	Column B
12. The average of the sum of the squares of the first five natural numbers is	(a) 5:1
13. If $x = 5y$, then $x:y$ is	(b) 20%
14. The cost price of an article is ₹200 and its selling price is ₹180. Find the loss percentage.	(c) 10%
15. At what rate of interest will ₹250 amount to triple its present value in 10 years at simple interest (p.a.)%.	(d) 11
	(e) 1:5
	(f) 15%
	(g) 10

24.

▶ View Text Solution

Assessment Tests Test 2

1. The following steps are involved in finding the value of x, if

32x:24 $= x^3 : 12$. Arrange them in sequential order.

(A) $2x^2 = 32 \Rightarrow x^2 = 16$

(B) $24x^2 = 12 \times 32$

(C) $32x : 24 = x^3 : 12 \Rightarrow 24x^3 = 12 \times 32x$

(D) $x = \pm 4$

    A. CDAB

    B. CBAD

    C. ABCD

    D. BCDA

Answer: B

▶ **View Text Solution**

2. The ages of Ram and Laxman are in the ratio of 4:3 and the sum of their ages is 49 years. Find the ratio of their ages after 7 years. The following steps are involved in solving the above problem. Arrange them in sequential order.

(A) Given, the raito of ages is 4:3

(B) Let Ram's age b 4x years and Laxman's age be 3x year. 4x + 3x = 49 $\Rightarrow 7x = 49 \Rightarrow x = 7$

(C) Ratio of ages after 7 years = 35:28 = 5:4.

(D) Ram's age $= 4 \times 7 = 28$ years and Laxman's age $= 3 \times 7 = 21$ years

Ram's age after 7 years = 35 years and Laxman's age after 7 years = 28 years.

   A. ABCD

   B. BCDA

   C. CDAB

D. ABDC

Answer: D

> ▶ View Text Solution

3. Find the value of x:y, if $\dfrac{8x - 10y}{3x + 4y} = \dfrac{4}{5}$.

A. $55 : 29$

B. $36 : 17$

C. $33 : 14$

D. $16 : 11$

Answer: C

> ▶ Watch Video Solution

4. The value of 20% of 40% of 100 is____.

A. 12

B. 16

C. 8

D. 25

Answer: C

▶ **Watch Video Solution**

5. The fourth proportional of 3, 7, and 15 is____.

A. 35

B. 15

C. 7

D. 21

Answer: A

▶ **Watch Video Solution**

6. The mean proportional of 64 and 4 is_____.

A. 8

B. 32

C. 4

D. 16

Answer: D

▶ **Watch Video Solution**

7. Which of the following fractions is equivalent to $2.\overline{9}\%$?

A. $\dfrac{3}{100}$

B. 3

C. 2.9

D. $\dfrac{2.9}{100}$

Answer: A

▶ **Watch Video Solution**

8. What distance (in m) will a train cover in 1 min travelling at 72 km/h?

A. 120

B. 1200

C. 1400

D. 720

Answer: B

9. If a sum of Rs 2000 is lent out at 2% per annum for 10 years under simple interest, then the amount is Rs 1400 (b) Rs 2400 Rs 200 (d) Rs 1500

A. 1400

B. 2400

C. 200

D. 1500

Answer: B

> ▶ **Watch Video Solution**

10. If the cost of 15 mangoes is Rs 180, then what is the cost of 25 mangoes (in Rs)?

A. 220

B. 360

C. 200

D. 300

Answer: D

> ▶ **Watch Video Solution**

11. Twelve men, working at 8 h a day, can do a piece of work in 18 days. In how many days can 24 men working at 6 h a day can do the same work?

A. 12

B. 16

C. 20

D. 30

Answer: A

12.

Column A	Column B
The average of the first 10 natural number is	(a) 20 years
If $a:b = 2:3$ and $b:c = 9:7$, then $a:b:c$ is	(b) 5.5
If the cost price of an article is Rs. 12 and the selling price of the article is Rs. 15. Find the profit percentage.	(c) 6:9:7
In how many years will the amount of Rs. 500 double at the rate of 5% p.a under simple interest?	(d) 5 %
	(e) 25 %
	(f) 2:3:7
	(g) 25 years
	(h) 5

▶ View Text Solution

13. Find the value of x, if $32x : 24 = x^3 : 12$.

▶ Watch Video Solution

14. The ages of Ram and Laxman are in the ratio of 4:3 and the sum of their ages is 49 years. Find the ratio of their ages after 7 years.

15. Find the value of x:y, if $\dfrac{8x - 10y}{3x + 4y} = \dfrac{4}{5}$.

A. $55 : 29$

B. $36 : 17$

C. $33 : 14$

D. $16 : 11$

Answer: C

16. The value of 20% of 40% of 100 is____.

A. 12

B. 16

C. 8

D. 25

Answer: C

▶ **Watch Video Solution**

17. The fourth proportional of 3, 7, and 15 is___.

A. 35

B. 15

C. 7

D. 21

Answer: A

▶ **Watch Video Solution**

18. The mean proportional of 64 and 4 is_____.

A. 8

B. 32

C. 4

D. 16

Answer: D

▶ **Watch Video Solution**

19. Which of the following fractions is equivalent to $2.\bar{9}\%$?

A. $\dfrac{3}{100}$

B. 3

C. 2.9

D. $\dfrac{2.9}{100}$

Answer: A

20. What distance (in m) will a train cover in 1 min travelling at

72 km/h?

A. 120

B. 1200

C. 1400

D. 720

Answer: B

▶ **Watch Video Solution**

21. Rs2000 is lent out at 2% per annum for 10 years under simple interest. Calculate the amount (inRs).

A. 1400

B. 2400

C. 200

D. 1500

Answer: B

22. If the cost of 15 mangoes is Rs 180, then what is the cost of 25 mangoes (in Rs)?

A. 220

B. 360

C. 200

D. 300

Answer: D

23. Twelve men, working at $8h$ a day, can do a piece of work in 18 days. In how many days can 24 men working at $6h$ a day can do the same work?

A. 12

B. 16

C. 20

D. 30

Answer: A

▶ **Watch Video Solution**

Column A	Column B
27. The average of the first 10 natural numbers is	(a) 20 years
28. If $a:b = 2:3$ and $b:c = 9:7$, then $a:b:c$ is	(b) 5.5
29. If the cost price of an article is ₹12 and the selling price of the article is ₹15. Find the profit percentage.	(c) 6:9:7
30. In how many years will the amount of ₹500 double at the rate of 5% p.a. under simple interest?	(d) 5%
	(e) 25%
	(f) 2:3:7
	(g) 25 years
	(h) 6

24.

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Test Your Concepts Very Short Answer Type Questions State Whether The Following Statements Are True Or False

1. If a:b = 3:4, then 4a:3b = 1:1.

▶ **Watch Video Solution**

2. Inverse ratio of 5:2 is 2:5.

▶ **Watch Video Solution**

3. Simplest form of 18:27 is

▶ **Watch Video Solution**

4. If $\dfrac{1}{8} : \dfrac{1}{12} = 3 : x$ then x = ?

▶ **Watch Video Solution**

5. If $\dfrac{x}{21} = \dfrac{7}{3}$ then x = ?

▶ **Watch Video Solution**

6. If 1, 2, 3, and x are in proportion, then x = 1.

▶ **Watch Video Solution**

7. The cost of 7 pens is Rs42, then the cost of 4 pens is ?

▶ **Watch Video Solution**

8. If 3 persons can construct x chairs in 6 days, then 6 persons can construct x chairs in 4 days.

▶ **Watch Video Solution**

9. If SP = Rs. 22 and CP = Rs. 18, then profit = Rs. 4.

> ▶ Watch Video Solution

10. If CP = Rs 87 and loss = Rs 16, then SP = ?

> ▶ Watch Video Solution

Test Your Concepts Very Short Answer Type Questions Fill In The Blanks

1. If interest on Rs. X for 2 years at R% p.a. is Rs. 80, then interest on Rs. 2x for 1 year at R% p.a. is___.

> ▶ Watch Video Solution

2. Per cent means____.

 Watch Video Solution

3. Compound ratio of 2:3 and 3:4 is____.

 Watch Video Solution

4. Ratio of 2 rupees 50 paise and 3 rupees 75 paise is ____.

 Watch Video Solution

5. The average of 23, 24, 28 and 29 is_____.

 Watch Video Solution

6. The ratio of the number of boys and the number of girl in a class is 9:11. If the number of boys is 18, then the number of girls is ____.

▶ **Watch Video Solution**

7. Mean proportion of 2 and 8 is_____.

▶ **Watch Video Solution**

8. 36% of 150 = _____

▶ **Watch Video Solution**

9. If 25% of x is 100, then x = _____.

10. If a:b = 2:3 and b:c = 3:4, then a:c = _____.

Test Your Concepts Very Short Answer Type Questions Select The Correct Answer From The Given Options

1. 25:30 = ____

A. $4:5$

B. $5:6$

C. $6:5$

D. $6:7$

Answer: B

> ▶ Watch Video Solution

2. $\dfrac{1}{39} : \dfrac{1}{27} = $ _____

A. $14:1$

B. $11:4$

C. $9:13$

D. $1:5$

Answer: C

> ▶ Watch Video Solution

3. $\dfrac{2}{5}$ as a per cent is ____.

A. 30 %

B. 35 %

C. 40 %

D. 45 %

Answer: C

▶ **Watch Video Solution**

4. Write

- 80 %
- 125 %
- 120 %
- 130 %

Answer: B

---

5. Express $36\,\%$ as a fraction.

A. $\dfrac{3}{5}$

B. $\dfrac{4}{25}$

C. $\dfrac{3}{20}$

D. $\dfrac{6}{25}$

Answer: A

6. 1.25% as a fraction is _____.

A. $\dfrac{1}{40}$

B. $\dfrac{1}{60}$

C. $\dfrac{1}{80}$

D. $\dfrac{1}{70}$

Answer: C

▶ **Watch Video Solution**

7. If CP = Rs. 200 and SP = Rs. 250, then find the profit or loss.

A. Rs50 loss

B. Rs50 profit

C. Rs25 profit

D. Rs25 loss

Answer: B

▶ **Watch Video Solution**

8. If CP = Rs53 and SP = Rs73 , then find the profit or loss.

A. Rs20 profit

B. Rs60 loss

C. Rs40 profit

D. Rs60 profit

Answer: A

▶ **Watch Video Solution**

9. Which of the following fractions is equivalent to 25%?

A. $\dfrac{1}{4}$

B. $\dfrac{1}{5}$

C. $\dfrac{1}{3}$

D. $\dfrac{1}{2}$

Answer: A

▶ **Watch Video Solution**

10. If $\dfrac{5}{6}$ of 29% of y = 29, then find the value of y.

A. 290

B. 58

C. 120

D. 100

Answer: C

▶ **Watch Video Solution**

1. Divide Rs 340 in the ratio 5:6:6.

▶ **Watch Video Solution**

2. Find the fourth proportional of 2,3, and 6.

3. Find the average of 22 kg, 24 kg, 33 kg, 42 kg, and 39 kg.

4. Find the amount .Rs. 2500 for 3 years at 12% per annum.

5. Find the amount when Rs. 3650 for 2 years 6 months at 16% per annum.

6. If a:b = 5:6 and b:c = 3:4, then find a:b:c.

7. The cost of 8 books is Rs. 56. Find the cost of 10 books.

8. Twelve men are required to complete a work in 24 days.How many men are required to complete twice the work in 16 days?

9. In a class, there are 30 boys and 20 girls. What percentage of the number of boys in the class?

10. By selling a television for Rs. 6600, a trader gains 10%. Find the cost price of the television for the trader.

11. The average height of 20 boys is 120 cm and the average height of 10 girls is 117 cm. Find the average height of these 30 students.

12. A piece of cloth which is 10 m in length is cut into two pieces such that the length of the one piece is equal to one-

fourth the length of the other. Find the lengths of the two pieces.

13. The ratio of the costs of two vehicles is 3:2 and the total cost of the two vehicles is Rs. 50,000. Find the individual costs of the vehicles.

14. If a number is divided into three parts which are in the raio 1:1:2, then what percentage of the total value is the sum of the equal parts?1

15. In a right triangle, the length of the sides is in the ratio 5:4:3. Find the length of individual sides, if the difference between the longest side and the smalles side is 2 cm.

16. The price of a commodity is reduced to its $\dfrac{5}{6}$ th. What is the percentage reduction in the price ?

17. Find a number such that the ratio of $\dfrac{5}{2}$ to the number is the same as the ratio of the number to $\dfrac{5}{8}$.

18. Town A is 200 km far from town B. A person can travel in a car from town A to town B in 4 h. What is the speed of the car (in kmph)?

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19. Ajay's home is 150 m away from a bus stop. At what speed should he travel to reach his house from the bus stop in 2 min?

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20. Find the time taken by a car running at 25 m/s to cover a distance of 360 km (in hours)?

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21. A 200 m long train passes a pole in 20s. What is the speed of the train (in m/s)?

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22. Kiran alone can do a piece of work in 15 days and Aman can do the same in 10 days. If they start working together, in how many days can the work be completed?

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23. If 256 is the third proportional of a and b, where a:b = 3:16', then find the value of a +b.

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24. If $\dfrac{15x + 16y}{25x + 4y} = \dfrac{7}{6}$, then find x:y.

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25. If m:n = 3:5 and m:r = 2:3, then find n:r.

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26. The present ages of Pawan and Kalyan are in the ratio of 4:5. The product of their ages numerically is equal to 980. Find the differnce between their ages (in years).

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27. Aashritha scored 85, 90, 98, 78, 89, and 70 marks in six different subjects. The maximum mark in each subject is 100. Find her average score.

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28. A shop owner sold a sofa set for Rs. 10,000, losing Rs. 2500. Find his loss percentage.

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29. P can do a piece of work in 25 days and Q can do the same work in 15 days. In how many days they can complete the work by working together?

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30. A certain sum becomes doubled in 5 years. Find the rate of interest.

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31. A train crosses a pole in 12 s, when it is traveling at 54 km/h. Find the length of the train.

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32. Calculate the amount of Rs. 2500 at 12% per annum for 8 years under simple interest.

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33. Deepti received Rs500 as pocket money. She bought a new dress using 40% of her pocket money. She bought crackers worth Rs100 and also a gift for her parents with the remaining amount. What was the cost of the gift she bought for her parents?

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34. In a board exam,the pass percentages of a certain school for the past three years are 87%,90% and 92%. If 400 students appear for the exam every year,then how many students have passed the exam in the past three years?

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35. A certain concrete mix needs cement, fine aggregate, and coarse aggregate in the ratio 1:2:4. If the contractor has 25 kg of fine aggregate, how much quantity of the cement and that of the coarse aggregate is required to prepare the mix?

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36. The ratio of Ram's savings to his expenditure is 5:2 and that of Manu is 4:3. If Ram's expenditure is $\frac{1}{3}$ rd of Manu's expenditure and the sum of their expenditures is Rs3000, then find the salaries of Ram and Manu, respectively.

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37. The ratio of the number of boys to that of girls in a school is 3:4. Two-third of the number of boys are cricket players and the rest are football players. One-fourth of the number of girls are badminton players and the rest are handball players. Which game has the greatest number of participants if the total strength of the school is 1400?

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38. In an exam, there were 50 questions and each question carries 4 marks. Sahil scored 80% marks in the test. Later 5 questions were proved logically incorrect and the score of each student was calculated out of the rest of the questions. What is Sahil's new score, if he hadn't answered any of the deleted questions?

39. Ramchand took a loan of Rs12,000 from his neighbour and agreed to repay it after 2 years at the rate of 8% per annum, simple interest. At the end of 2 years, his neighbour demanded an interest at the rate of 12%, what is the extra amount paid by the borrower?

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40. How much time will a 200m long train running at 15 m/s take to cross a bridge of length 355 m?

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41. A farmer can plough a farm in 10 days by working 5 h a day. In how many days can 5 farmers plough 10 such farms working at 5h a day?

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42. By working together, A and B can finish a work in 15 days. If B alone can finish the work in 20 days, in how many days can A alone finish the work?

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43. A pipe can fill an empty tank in 5 h and there is an emptying pipe which can empty the full tank in 7 h. If both the pipes are

kept open simultaneously, then in how many hours will the tank be filled?

44. A trader marked his articles 20% above cost price. The cost price per article is Rs250. If he allows 10% discount on the marked price, then find his profit percentage.

45. A train of length 200 m traveling at $30ms^{-1}$ overtakes another train of length 300 m traveling at $20ms^{-1}$. The time taken by the first train to pass the second is

46. Solve for x: $\dfrac{3x + 8}{2x + 9} = \dfrac{2}{3}$

47. The present ages of Ram and Sita are in ratio of 5:6. The product of their ages (in years) is 120.

Find the difference in their ages (in years)

48. Ram can do a work in 20 days. Raj can do $\left(\dfrac{1}{30}\right)$ of a piece of work in a day. In how many days can they do the same work, working together?

49. Find the value of x, if $4:5 = x:10$.

50. A train crosses a telephone pole in 25 s when it is travelling at 25 m/s. Find the length of the train (in m).