



MATHS

BOOKS - PEARSON IIT JEE FOUNDATION

RATIO, PROPORTION AND VARIATION

Example

1. Express 75:87 in its simplest form.



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2. Compare the ratios 3:4 and 17:24



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3. Divide Rs 360 in the ratio 4:5



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4. Divide Rs 207 among three friends A,B and C in the

ratio $\frac{1}{6} : \frac{1}{4} : \frac{1}{3}$



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5. If $A:B=2:3$ and $B:C=4:17$, then find $A:B:C$



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6. if $A=2B$ and $B=3C$, then find $A:C$.



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7. A question paper consist of questions, each carrying $\frac{1}{2}$ mark, 1 mark and 2 marks ini the ratio 2:2:1. if the maximum mark in the exam is 100, then find the number of questions of each type.



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8. The ratio of marks obtained by Rajesh, Rakesh and Ramesh in an exam is 2:4:9. Find the marks obtained by Rakesh and Ramesh, if Rajesh scored 30 marks in the exam.



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9. If $\frac{x}{a^2 - b^2} = \frac{y}{b^2 - c^2} = \frac{z}{c^2 - a^2}$, then prove that $x+y+z=0$.



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10. If $\frac{x}{a} = \frac{y}{b} = \frac{z}{c}$, then prove that each ratio is equal to $\left(\frac{3x^3 - 11y^3 + 13z^3}{3a^3 - 11b^3 + 13c^3} \right)^{\frac{1}{3}}$



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11. If $x : y : z = 3 : 4 : 5$ and $x^3 + y^3 + z^3 = 1728$, then find $(x - y + z)$



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12. the incomes of Rajesh and Mahesh are in the ratio 7:9 and their savings are in the ratio 5:7. what is the

ratio of their expenditures in the same order, if Mahesh saves two third of his income?

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13. if $x : y = 3 : 2$ then find $\frac{2x + y}{4x - 3y}$

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14. Verify whether 2,3,4 and 6 are in proportion

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15. Determine the fourth proportional to the numbers 5,6 and 8.

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16. Find the mean proportional between 6 and 24.

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17. If 6 men can do a piece of work in 8 days, then find the number of days in which 8 men can do the same work.

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18. If in a family consumption of rice is 60 kg for 24 days, then find the consumption of rice in 18 days.

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19. If $(3a + 5b) : (3a - 5b) :: (3c + 5d) : (3c - 5d)$, then show that a,b,c and d are in proportion.

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20. if $\frac{2a + 3b + 4c + 5d}{2a - 3b - 4c - 5d} = \frac{2a - 3b + 4c - 5d}{2a - 3b - 4c + 5d}$,

then show that a,3b,2c and 5d are in proportion.



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21. If a, b, c and d are in proportion, then show that

$$\frac{a^3 + 3ab^2}{3a^2b + b^3} = \frac{c^3 + 3cd^2}{3c^2d + d^3}$$



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22. 2 men each working 5 hour per day can finish a job in 12 days. How long will 4 men each working 2 hours per day take to finish the same job?



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23. Given that a varies directly with the cube of b .

When a is 3, b is also 3. Find b when a is 24.

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24. Express 75:87 in its simplest form.

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35. the incomes of Rajesh and Mahesh are in the ratio 7:9 and their savings are in the ratio 5:7. what is the ratio of their expenditures in the same order, if Mahesh saves two third of his income?



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36. if $x : y = 3 : 2$ then find $\frac{2x + y}{4x - 3y}$



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37. Verify whether 1, 5, 9 and 45 are in proportion.



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38. Determine the fourth proportional to the numbers 5, 6 and 8.



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39. Convert the ratio 6 : 24 is simplest form.



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40. If 6 men can do a piece of work in 8 days, then find the number of days in which 8 men can do the same work.



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41. If in a family consumption of rice is 60 kg for 24 days, then find the consumption of rice in 18 days.



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42. If $(3a + 5b) : (3a - 5b) :: (3c + 5d) : (3c - 5d)$,

then show that a,b,c and d are in proportion.



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43. if $\frac{2a + 3b + 4c + 5d}{2a - 3b - 4c - 5d} = \frac{2a - 3b + 4c - 5d}{2a - 3b - 4c + 5d}$,

then show that a,3b,2c and 5d are in proportion.



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44. If a, b, c and d are in proportion, then show that

$$\frac{a^3 + 3ab^2}{3a^2b + b^3} = \frac{c^3 + 3cd^2}{3c^2d + d^3}$$



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45. 2 men each working 5 hour per day can finish a job in 12 days. How long will 4 men each working 2 hours per day take to finish the same job?



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46. Given that a varies directly with the cube of b . When a is 3, b is also 3. find b when a is 24.



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Very Short Answer Type Question

1. Express the ratio 51:525 in the lowest terms.



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2. If $5M=3N$, then $M:N$ is ____



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3. Express the ratio $\frac{4}{5} : \frac{8}{7}$ in the lowest terms



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4. If $A=3B=5C$, then $A:B:C=$ _____.



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5. if $x:5=9:5$, then what is the value of x ?



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6. Triplicate ratio of $2:3$ is _____



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7. If $R:S=3:1$ and $S:T=1:5$, then $R:S:T=$ _____.



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8. Between the two ratios 3:5 and 4:7 which is greater?



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9. If $a:b :: b:c$ then a,b,c are in _____



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10. The mean proportional to 4 and 9 is 6. is it true or false?



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11. The numbers 3,6,8,12 are in proportion. Is it true or false?



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12. if $\frac{a}{b} = \frac{c}{d} = \frac{e}{f} = \frac{1}{3}$, then $\frac{5a + 3c + 7e}{5b + 3d + 7f} =$



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13. Find x iff 2,7,5 $\left(\frac{x}{2}\right)$ are in proportion.



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14. Find the mean proportional of 16 and 4.



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15. If $7:15=56:x$, then what is the value of x ?



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16. find the fourth proportional to 4,5 and 8.



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17. If the cost of 15 books is Rs90, then what is the cost of one book?



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18. When $x=2,7,11, \dots, y=8,28,44, \dots$, then x and y are in_____



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19. When x and y are in indirect proportion and if y doubles then x becomes_____



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20. Eight men can do a certain amount of work in 3 days. Sixteen men can do the same amount of work in 6 days. It is true or false.?

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21. The ratio obtained when 9:11 is written with its consequent equal to 99 is _____

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22. A and B share some marbles in the ratio 4:5. If B gets 10 marbles more than A, then what is A's share?



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23. In the above problem, find the total number of marbles.



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24. If $A:B=3:4$ and $B:C=12:13$ find $A:C$.



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25. If $x, 20, 30$ and 60 are in proportion then what is the value of x ?



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26. The sub-duplicate ratio of 64:81 is _____.



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27. if $x:y=5:7$ then find $(3x + 4y) : (x + 2y)$.



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28. If 40 men complete a piece of work in 5 days, then 80 man can complete the same piece of work in _____.



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29. The area of a circle (A) varies directly as the square of its radius. The area of the circle of radius 7 cm is 154 cm^2 . What is the area of the circle of radius 35 cm?



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30. 120 men can lay a road 80 km long in 20 days. In how many days can 100 men lay a road of length 90 km?



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Short Answer Type Question

1. A certain sum of money is divided between X and Y in the ratio of $2\frac{1}{3} : 1\frac{3}{4}$ and X gets Rs 440. what is Y's share?



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2. Find the number which bears the same ratio to $\frac{5}{9}$ as $\frac{3}{2}$ does to $\frac{4}{5}$.



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3. Arrange the ratios 3:4, 5:6, 1:2 and 19:15 in their increasing order of magnitude.



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4. What number must be added to each term of the ratio 7:5 so that it becomes 4:3?



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5. A and B share money in the ratio $1\frac{2}{3} : 2\frac{3}{4}$. What is the total money shared if A got Rs 720?



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6. If $(5x + 7y) : (3x + 11y) = 2 : 3$, then find $x:y$.



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7. If $x : y = 2 : 5$ then $(10x + 3y) : (5x + 2y)$ is _____.



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8. The mean proportional between 2 and 32 is.



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9. If $\frac{a}{b} = \frac{c}{d} = \frac{e}{f} = \frac{3}{4}$, then what is the value of $\frac{3a - 4c - e}{3b - 4d - f}$?

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10. X and Y share marbles in the ratio of 5:6. Find X's share, if X got 20 marbles less than that of Y.

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11. If $bc:ac:ab=1:3:5$, then find $\frac{a}{bc} : \frac{b}{ca}$.

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12. If $a:b:c:d=2:3:5:7$ and $a+b=60$, then $c+d$ is ____.



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13. The monthly expenditure of a family o 9 members is Rs 891. What will be the montly expenditure of the family, if there are 12 members?



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14. Write the result after applying componendo and dividendo to

$$3a^2 + 2b^2 : 3a^2 - 2b^2 :: 3c^2 + 2d^2 : 3c^2 - 2d^2.$$

to



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15. The volume of a sphere (V) varies directly as the cube of its radius. The volume of the sphere of radius 3 cm is $36\pi cm^3$. What is the volume of a sphere of radius 15 cm?



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Essay Type Question

1. The ratio of the number of students in schools X and Y is 4:7. if 15 students from Y join X, then the ratio

becomes 1:1. What is the total number of students in the schools X and Y?

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2. A purse contains one-rupee, 50 paise and 25 paise coins in the ratio 4:3:6. If the total amount in the purse is Rs 28, then find the number of 50 paise coins present in the purse.

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3. If $\frac{x}{2a - 3b} = \frac{y}{3b - 4c} = \frac{z}{4c - 2a}$, then find the value of $x^3 + y^3 + z^3$.



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4. The force of attraction (A) between two objects, whose masses are fixed, varies inversely with the square of their distance of separation (d). The force of attraction between them is 2 units when the distance is 5 cm. What is the distance between the two objects, if the attraction between them is 8 units?



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5. The volume (V) of a mass of gas varies directly as its absolute temperature (T) and inversely as the pressure

(P) applied to it. The gas occupies a volume of 400 ml when the temperature is 150 k and pressure is 240 Pa. what is the temperature of gas whose volume and pressure are 250 ml and 320 Pa respectively?



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Level 1

1. C and D share a certain sum of mone in the ratio $2\frac{1}{4} : 1\frac{3}{4}$, if D's share is Rs. 210, then find the total sm of money shared.

A. Rs 540

B. Rs 490

C. Rs 480

D. Rs 420

Answer: C



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2. in an office, the ratio of the salary of an officer to that of a clerk is 25:9. if the salary of the clerk is Rs 10000 less than that of the officer, then what is the salary of the officer?

A. Rs 15600

B. Rs 15625

C. Rs 15650

D. Rs 15675

Answer: B



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3. In the previous problem, what is the salary of the clerk?

A. Rs 5600

B. Rs 5625

C. Rs 5650

D. Rs 5675

Answer: B



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4. In a class, there are 225 students. Which of the following cannot be the ratio of the number of students passed to the number of students failed?

A. 2 : 3

B. 7 : 8

C. 5 : 4

D. 3 : 4

Answer: D



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5. A sum of Rs 4680 was divided among Parthu, Kunti and Arjun in the ratio of $\frac{1}{2} : \frac{1}{3} : \frac{1}{4}$ find the share of Parthu. (in Rs)

A. 1440

B. 1080

C. 2160

D. none of these

Answer: C



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6. If $9 : 12\frac{2}{3} = 81 : (x + 2)$, then what is the value of x ?

A. 112

B. 102

C. 108

D. 120

Answer: A



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7. Rs 117 was supposed to be divided among P, Q and R in the ratio 3:4:6. But, by mistake, it was divided in the ratio $\frac{1}{3} : \frac{1}{4} : \frac{1}{6}$ How many of P,Q and R gained due to this mistake?

A. 0

B. 1

C. 3

D. 2

Answer: C



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8. In a bag, the number of Rs 10 notes, Rs 20 notes and Rs 50 notes are in the ratio 5:4:3. the total value of the notes in it is Rs 280. find the number of Rs. 10 notes in it.

A. 4

B. 5

C. 3

D. 2

Answer: B



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9. If $x:y=3:7$, then find $(7x+3y):(9x-3y)$

A. 7 : 1

B. 1 : 7

C. 7 : 3

D. 3 : 7

Answer: A



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10. if $\frac{a}{b-a} = \frac{7}{8}$, find the value of $\frac{a}{b}$

A. 7

B. $\frac{15}{7}$

C. $\frac{7}{15}$

D. $\frac{-15}{7}$

Answer: C



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11. Present ages of A and B are in the ratio 7:4, which of the following can be the difference between their ages after 8 years?

A. 5 years

B. 10 years

C. 15 years

D. All of these

Answer: C



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12. Which of the following will result in 10,20,x and 40 being in proportion?

A. Add one to 10

B. Add one to 20

C. Add one to 19

D. Add one to 40

Answer: C



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13. if $\frac{x + y}{x + y + z} = \frac{y + z}{x + y + z} = \frac{x + z}{x + y + z} = p,$

then which of the following can be the value of p?

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

B. 2

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

D. 3

Answer: C



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14.

if

$$x = \frac{a - b}{a + b + c + d} = \frac{b - c}{a + b + c + d} = \frac{c - d}{a + b + c + d}$$
$$= \frac{d - a}{a + b + c + d}, \text{ then find } x^3.$$

A. 1

B. 8

C. 0

D. 27

Answer: C



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15. if the ratio of the ages (in years) of A and B, 5 years ago was 5:7, then which of the following can be the sum of their ages 5 years from now?

A. 90

B. 98

C. 92

D. 87

Answer: C



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16. One day, the ratio of the number of first class and second class passengers who travelled were in the ratio 1:30. the ratio of the first and second class fares is 3:1. the total amount collected from the passengers that day was Rs 66000. find the amount collected from the first class passengers (in Rs)

- A. 3000
- B. 6000
- C. 9000
- D. 12000

Answer: B



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17. In a bag, the number of Re. 1 coins, 50 paise coins and 25 paise coins are in the ratio 3:2:4. The total value of the coins in it is Rs. 50. find the number of 50 paise coins in it.

A. 10

B. 20

C. 30

D. 40

Answer: B



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18. Incomes of A and B are Rs 3500 and Rs 4200 respectively. The ratio of the savings of A and B is 4:3 and the ratio of their expenditures is 3:4. find the savings of A.

A. Rs 800

B. Rs 600

C. Rs 900

D. Rs 1000

Answer: A



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19. if the ratio of the ages (in years) of x and y , 8 years ago is $7:6$, then which of the following can be the sum of their ages 8 years from now?

A. 82

B. 97

C. 75

D. 94

Answer: B



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20. If $P:Q:R=2:3:4$ and $P^2 + Q^2 + R^2 = 11600$,

then find $(P + Q - R)$

A. 15

B. 16

C. 18

D. 20

Answer: D



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21. If $\frac{x}{2}$, $\frac{7}{x}$, $\frac{3x}{2}$ and $\frac{7}{3}$ are in proportion, then the value of x is _____

A. 3

B. 6

C. 9

D. 10

Answer: C



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22. If $(3a + 4b) : (3a - 4b) = (3c + 8d) : (3c - 8d)$,

then which of the following is true?

A. $ad=bc$

B. $2ad=bc$

C. $2ab=cd$

D. $ab=cd$

Answer: B



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23. If $\frac{p}{q} = \frac{r}{s} = \frac{t}{u}$ then $\frac{p^2 + r^2 + t^2}{q^2 + s^2 + u^2} =$

A. $\frac{prt}{qsu}$

B. 1

C. $\frac{p^3 + r^3 + t^3}{q^3 + s^3 + u^3}$

D. $\left(\frac{p + r + t}{q + s + u}\right)^2$

Answer: D



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24. Which of the following ratios are in ascending order?

A. 5:6, 11:13, 8:9, 7:8

B. 5: 6, 7: 8, 11: 13, 8: 9

C. 11: 13, 5: 6, 7: 8, 8: 9

D. 5: 6, 11: 13, 7: 8, 8: 9

Answer: D



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25. Given that x varies directly with the square of y .
when x is 2, y is also 2. find y when x is 8. given that it is
positive.

A. 8

B. 6

C. 4

D. 2

Answer: C



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26. Twenty men can lay a road off 50 km long in 10 days. In how many days can 15 men lay a road of 75 km long?

A. 10 days

B. 20 days

C. 30 days

D. 40 days

Answer: B



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27. Fifteen men take 30 days to complete a piece of work, working 8 hours a day. Find the time taken by 30 men to complete 5 times as much work, working 10 hours a day.

A. 30 days

B. 45 days

C. 60 days

D. 15 days

Answer: C



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28. The flow of current through a resistor varies directly with the voltage (V) across it. When voltage across the resistor is 30 volts, the flow of current through it is 5A. What is the flow of current when the voltage across it is 60 volts?

A. 10A

B. 2.5A

C. 5A

D. 20A

Answer: A



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29. For 20 Student, the mess bill for 12 days is Rs 7000.

In how many days will the mess charges to Rs 4900 for 8 students?

A. 20 days

B. 21 days

C. 22 days

D. 23 days

Answer: B



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30. Frequency of vibration of a wire varies inversely with its length. The frequency is 220 Hz when the length of the wire is 120m. Find the frequency of the wire when its length is 100 m.

A. 261

B. 262

C. 280

Answer: D



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31. if $(2x+1):(5x-1)$ is the triplicate ratio of $3:4$, then find the value of x .

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

(A) $(2x + 1) : (5x - 1) = 3^3 : 4^3$

(B) $135x - 27 = 128x + 64$

(C) $27(5x - 1) = 64(2x + 1)$

(D) $7x = 91 \Rightarrow x + \frac{91}{7} = 13$

A. ACBD

B. ABCD

C. BCAD

D. CABD

Answer: A



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32. If $A:B=3:2$, $B:C=4:3$ and $C:D=3:5$, then divide Rs 360 among A,B,C and D. the following are the steps involved in solving the above problem. Arrange them in sequential order.

$$(A) A's \text{ share} = \frac{6}{18} \times 360 = Rs120$$

$$(B) \Rightarrow A : B : C : D = 6 : 4 : 3 : 5$$

(C)

$$A : B = 3 : 2 = 6 : 3, B : C = 4 : 3 \text{ and } C : D = 3 : 5$$

(D) to divide Rs 360 among A,B,C and D, we should know the value of A:B:C:D.

A. BCDA

B. DCBA

C. DABC

D. CDBA

Answer: B



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33. If $x:15=y:6$, then find the value of $\frac{x+y}{x-y}$

The following problem. Arrange them in sequential order.

(A) Applying componendo-dividendo.

(B) Product of means=Product of extremes. ItBrgt (C)

$$\frac{x+y}{x-y} = \frac{7}{3}$$

(D) $\frac{x}{y} = \frac{5}{2}$

(E) $6x = 15y$

A. BDACE

B. BEDAC

C. BADEC

D. ABECD

Answer: B



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34. if two numbers are in the ratio $\frac{1}{15} : \frac{1}{20}$, then by what percentage is the second number less than the first? The following are the steps involved in solving the above problem. Arrange them in sequential order

(A) Difference between the two numbers is $4x - 3x = x$

(B) Given that the ratio of two numbers

$$= \frac{1}{15} : \frac{1}{20} = 20 : 15 = 4 : 3$$

Let the numbers be $4x$ and $3x$.

(C) The percentage by which the second number is

$$\text{less than the first number} = \frac{x}{4x} \times 100\% = 25\%$$

(D) i.e., the second number is x less than the first number.

A. BADC

B. BDAC

C. DBAC

D. ABDC

Answer: A



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35. If the compound ratio of $9:x$ and $(x+1):15$ is $4:5$, then find the ratio of x and $(x+9)$. The following are the

steps involved in solving the above problem. Arrange them in sequential order. ItBrgt (A)

$$(9x + 9)5 = 4(15x)$$

$$(B) 9(x + 1) : 15x = 4 : 5$$

$$(C) x : (x + 9) = 1 : 4$$

$$(D) 15x = 45 \Rightarrow x = 3$$

A. BDAC

B. ABCD

C. DABC

D. BADC

Answer: D



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Level 2

1. if the ratio of the ages (in years) of x and y , 6 years ago was 9:8 then which of the following can be the sum of their ages 6 years from now?

- A. 89 years
- B. 85 years
- C. 91 years
- D. 92 years

Answer: D



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2. Which of the following ratios are in descending order?

A. $9:13$, $7:9$, $8:11$, $11:14$

B. $11:14$, $8:11$, $7:9$, $9:13$

C. $11:14$, $7:9$, $8:11$, $9:13$

D. $9:13$, $8:11$, $7:9$, $11:14$

Answer: C



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3. The monthly earnings and expenditures of A and B are in the ratio 5:7 and 2:1 respectively. Find A's earning per month if the monthly savings of B is twice that of A. Also given that A saves Rs 570 every month.

A. Rs 900

B. Rs 950

C. Rs 1000

D. Rs 1050

Answer: B



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4. Runs scored by Ramu and Raju are in the ratio 4:5.
Runs scored by Raju and Ramesh are in the ratio 3:2.
How many runs did Raju score, if Ramesh scored 120 runs less than that of Ramu?

A. 800

B. 850

C. 900

D. 950

Answer: C



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5. A mixture contains milk and water in the ratio of 5:6. on adding 8 litres of water, the ratio of milk and water becomes 1:2. find the quantity of the milk in the mixture. (in litres)

A. 12

B. 10

C. 14

D. 8

Answer: B



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6. The present ages of Aruna and Karuna are in the ratio 6:5. If the difference between their ages is 5 years, then what will be the sum of their ages after 20 years? (in years)

- A. 75
- B. 60
- C. 95
- D. 100

Answer: C



Watch Video Solution

7. If $\frac{Px}{(b-c)} = \frac{Qy}{(c-a)} = \frac{Rz}{(a-b)}$, then find $Pax + Qby + Rcz$.

A. $P + Q + R$

B. $x + y + z$

C. $a + b + c$

D. 0

Answer: D



Watch Video Solution

8. If $x + y + z = 0$ and

$$\frac{x^3 + y^3}{xyz} = \frac{y^3 + z^3}{xyz} = \frac{x^3 + z^3}{xyz} = a, \text{ then which of}$$

the following can be 'a'?

A. 2

B. 3

C. 6

D. 9

Answer: A



Watch Video Solution

9. If $\frac{a}{b} = \frac{c}{d} = \frac{e}{f}$, then $\frac{a^3 + c^3 + e^3}{b^3 + d^3 + f^3} = \dots$

A. 1

B. $\frac{a + c + e}{b + d + f}$

C. $\frac{(a + c + e)^2}{(b + d + f)^2}$

D. $\frac{ace}{bdf}$

Answer: D



Watch Video Solution

10. if $p = \frac{8ab}{a + b}$, then find the value of $\left(\frac{p + 4a}{p - 4a} + \frac{p + 4b}{p - 4b} \right)$.

A. 4

B. 2

C. 1

D. 3

Answer: B



Watch Video Solution

11. Twenty two men can complete a piece of work in 17 days. They work for 2 days. How many more men should now be employed so as to complete the work in another 10 days?

A. 45

B. 60

C. 57

D. 80

Answer: A



Watch Video Solution

12. Twenty two men can complete a piece of work in 17 days. They work for 2 days. How many more men should now be employed so as to complete the work in another 10 days?

A. 11

B. 22

C. 33

D. none of these

Answer: A



Watch Video Solution

13. Twenty five men can make a certain number of chairs in 80 working hours. They work for 10 hours. How many more men should now be employed so as to complete the work in another 50 working hours?

A. 35

B. 25

C. 20

D. 10

Answer: D



Watch Video Solution

14. The ratio between two numbers is 3:5 and their sum is 40. Find the larger of the two numbers.

A. 15

B. 20

C. 25

D. 40

Answer: C



Watch Video Solution

15. In a bag, the number of Rs 10 notes, Rs 20 notes and Rs 50 notes are in the ratio 5:4:3. the total value of the notes in it is Rs 280. find the number of Rs. 10 notes in it.

A. 4

B. 5

C. 3

D. 2

Answer: B



Watch Video Solution

16. Which of the following ratios are in descending order?

A. 12 : 17, 9 : 13, 7 : 11, 13 : 19

B. 12 : 17, 7 : 11, 13 : 19, 9 : 13

C. 12: 17, 9: 13, 13: 19, 7: 11

D. 12: 17, 13: 19, 9: 13, 7: 11

Answer: C



Watch Video Solution

17. Raja divided 35 sweets among his daughters Rani and Sita in the ratio 4:3. How many sweets did Rani get?

A. 16

B. 24

C. 28

D. 20

Answer: D



Watch Video Solution

18. In a bag, the numbers of Re 1 coins, 50 paise coins and 25 paise coins are in the ratio 3:2:4. the total value of the coins in it is Rs 50. Find the number of 50 paise coins in it.

A. 10

B. 20

C. 30

D. 40

Answer: B



Watch Video Solution

19. if $P : Q : R = 2 : 3 : 4$ and $P^2 + Q^2 + R^2 = 11600$, then find $P+Q-R$, where P, Q and R are whole numbers.

A. 15

B. 16

C. 18

D. 20

Answer: D



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Level 3

1. The age of a boy is one-fifth of the age of his mother and the sum of the ages of the son and the mother is equal to the age of the father. After 15 years, the sum of the ages of the son and his mother will be four-third of his father's age. Find the ratio of the present ages of son, mother and father respectively.

A. 1 : 5 : 7

B. 2: 10: 10

C. 1: 5: 6

D. 2: 8: 9

Answer: C



Watch Video Solution

2. In a school, maximum strength of each class is 60. In class VIII, the total number of students is a multiple of 5. On a certain day, four boys were absent and the ratio of the numbers of the remaining boys to that of girls was 5:4. Find the ratio of the total boys to that of girls.

A. 3:2

B. 4:3

C. 2:1

D. Data is insufficient

Answer: A



Watch Video Solution

3. If $x = \frac{4\sqrt{2}}{\sqrt{2} + 1}$, then find the value of

$$\frac{x + 2}{x - 2} - \frac{x + 2\sqrt{2}}{x - 2\sqrt{2}}.$$

A. 2

B. $12 + 8\sqrt{2}$

C. $12 - 8\sqrt{2}$

D. -2

Answer: B



Watch Video Solution

4. A diamond worth Rs 640000 breaks into two pices whose weights are in the ratio 5:3. if the value of the diamond varies directly with square of its weight, then find loss incurred due to breakage (in Rs).

A. 320000

B. 300000

C. 360000

D. none of these

Answer: B



Watch Video Solution

5. In a vessel, the pressure of a gas varies directly with its temperature, if its volume is kept constant, when the pressure is increased from 1 atm to 3 atm, then the temperature increases from 273 K to 'x' K. What is the value of x, if volume is kept constant?

A. 91K

B. 546 K

C. 819 K

D. 900 K

Answer: C



Watch Video Solution

6. In a school there are 650 students. The ratio of the boys to that fo the girls is 8:5. How many more girls should join the school so that the ratio becomes 4:3?

A. 25

B. 50

C. 100

D. 200

Answer: B



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Test Your Concepts

1. Express the ratio $3.25 : 9.25$ in the lowest terms.



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2. If $5M = 3N$, then $M : N$ is _____.



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3. Express the fraction as ratio $\frac{6}{7}$



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4. If $A=3B=5C$, then $A:B:C=$ _____.



[Watch Video Solution](#)

5. If $6 : 24 = 6 : x$, then what is the value of x ?



Watch Video Solution

6. Triplicate ratio of 2:3 is _____



Watch Video Solution

7. If $R:S = 3:1$ and $S:T = 1:5$, then $R:S:T =$
_____.



Watch Video Solution

8. which of the two ratios 4: 8 and 3: 10 is greater ?



Watch Video Solution

9. If $a : b :: b : c$, then express b in terms of a and c .

 [Watch Video Solution](#)

10. The mean proportional to 4 and 9 is 6. is it true or false?

 [Watch Video Solution](#)

11. The numbers 3, 6, 8, 12 are in proportion. Is it true or false?

 [Watch Video Solution](#)

 Watch Video Solution

12. if $\frac{a}{b} = \frac{c}{d} = \frac{e}{f} = \frac{1}{3}$, then $\frac{5a + 3c + 7e}{5b + 3d + 7f} =$

 Watch Video Solution

13. Find x if 2, 7, 5 $\left(\frac{x}{2}\right)$ are in proportion.

 Watch Video Solution

14. Find the mean proportional of 16 and 4.

 Watch Video Solution

15. If $7:15=56:x$, then what is the value of x ?

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16. Find the fourth proportional to 72, 168, and 150.

 [Watch Video Solution](#)

17. If the cost of 15 books is Rs. 90, then what is the cost of one book?

 [Watch Video Solution](#)

18. When $x = 2, 7, 11, \dots$, $y = 8, 28, 44, \dots$, then x and y are in _____.



Watch Video Solution

19. When x and y are in indirect proportion and if y doubles, then x becomes _____.



Watch Video Solution

20. Eight men can do a certain amount o work in 3 days. Sixteen men can do the sae amount of work in 6 days. It is true or false.?



[Watch Video Solution](#)

21. The ratio obtained when 9:11 is written with its consequent equal to 99 is _____



[Watch Video Solution](#)

22. A and B share some marbles in the ratio 4 : 5. If B gets 10 marbles more than A, then what is A's share?



[Watch Video Solution](#)

23. A and B share some marbles in the ratio 4 : 5. If B gets 10 marbles more than A, , find the total number of marbles.



Watch Video Solution

24. If $A : B = 3 : 4$ and $B : C = 12 : 13$, then find $A : C$.



Watch Video Solution

25. If x , 20, 30, and 60 are in proportion, then what is the value of x ?



Watch Video Solution

26. The sub-duplicate ratio of $64 : 81$ is _____.



Watch Video Solution

27. If $x : y = 5 : 7$, then find $(3x + 4y) : (x + 2y)$.



Watch Video Solution

28. If 40 men complete a piece of work in 5 days, then 80 men can complete the same piece of work in _____.



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29. The area of a circle (A) varies directly as the square of its radius. The area of the circle of radius 7 cm is 154 cm^2 . What is the area of the circle of radius 35 cm?



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30. 120 men can lay a road 80 km long in 20 days. In how many days can 100 men lay a road of length 90 km?



[Watch Video Solution](#)

31. A certain sum of money is divided between X and Y in the ratio of $2\frac{1}{3} : 1\frac{3}{4}$ and X gets Rs 440. what is Y's share?

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32. Find the number which bears the same ratio to $\frac{5}{9}$ as $\frac{3}{2}$ does to $\frac{4}{5}$.

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33. Arrange the ratios 3:4, 5:6, 1:2 and 19:15 in their increasing order of magnitude.



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34. What number must be added to each term of the ratio $7 : 5$ so that it becomes $4 : 3$?



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35. A and B share money in the ratio $1\frac{2}{3} : 2\frac{3}{4}$. What is the total money shared if A got Rs 720?



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36. If $(5x + 7y) : (3x + 11y) = 2 : 3$, then find $x : y$.



Watch Video Solution

37. If $x : y = 2 : 5$, then $(10x + 3y) : (5x + 2y)$ is _____.



Watch Video Solution

38. The mean proportional between 2 and 32 is _____.



Watch Video Solution

39. If $\frac{a}{b} = \frac{c}{d} = \frac{e}{f} = \frac{3}{4}$, then what is the value of $\frac{3a - 4c - e}{3b - 4d - f}$?



[Watch Video Solution](#)

40. X and Y share marbles in the ratio of 5 : 6. Find X's share, if X got 20 marbles less than that of Y.



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41. If $bc:ac:ab=1:3:5$, then find $\frac{a}{bc} : \frac{b}{ca}$.



[Watch Video Solution](#)

42. If $a:b:c:d=2:3:5:7$ and $a+b=60$, then $c+d$ is _____.



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43. The monthly expenditure of a family of 9 members is Rs 891. What will be the monthly expenditure of the family, if there are 12 members?

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44. Write the result after applying componendo and dividendo to

$$3a^2 + 2b^2 : 3a^2 - 2b^2 :: 3c^2 + 2d^2 : 3c^2 - 2d^2.$$

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45. The volume of a sphere (V) varies directly as the cube of its radius. The volume of the sphere of radius 3 cm is $36\pi\text{cm}^3$. What is the volume of a sphere of radius 15 cm?



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46. The ratio of the number of students in schools X and Y is 4:7. if 15 students from Y join X, then the ratio becomes 1:1. What is the total number of students in the schools X and Y?



[Watch Video Solution](#)

47. A purse contains one-rupee, 50 paise and 25 paise coins in the ratio 4:3:6. If the total amount in the purse is Rs 28, then find the number of 50 paise coins present in the purse.



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48. If $\frac{x}{2a - 3b} = \frac{y}{3b - 4c} = \frac{z}{4c - 2a}$, then find the value of $x^3 + y^3 + z^3$.



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49. The force of attraction (A) between two objects, whose masses are fixed, varies inversely with the square of their distance of separation (d). The force of attraction between them is 2 units when the distance is 5 cm. What is the distance between the two objects, if the attraction between them is 8 units?



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50. The volume (V) of a mass of gas varies directly as its absolute temperature (T) and inversely as the pressure (P) applied to it. The gas occupies a volume of 400 ml when the temperature is 150 K and pressure

is 240 Pa. what is the temperature of gas whose volume and pressure are 250 ml and 320 Pa respectively?



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Concept Application

1. C and D share a certain sum of mone in the ratio $2\frac{1}{4} : 1\frac{3}{4}$, if D's share is Rs. 210, then find the total sm of money shared.

A. Rs. 540

B. Rs. 490

C. Rs. 480

D. Rs. 420

Answer: C



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2. in an office, the ratio of the salary of an officer to that of a clerk is 25:9. if the salary of the clerk is Rs 10000 less than that of the officer, then what is the salary o the officer?

A. Rs. 15,600

B. Rs. 15,625

C. Rs. 15,650

D. Rs. 15,675

Answer: B



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3. In the previous problem, what is the salary of the clerk?

A. Rs. 5600

B. Rs. 5625

C. Rs. 5650

D. Rs. 5675

Answer: B



Watch Video Solution

4. In a class, there are 225 students. Which of the following cannot be the ratio of the number of students passed to the number of students failed?

A. 2 : 3

B. 7 : 8

C. 5 : 4

D. 3 : 4

Answer: D



Watch Video Solution

5. A sum of Rs 4680 was divided among Parthu, Kunti and Arjun in the ratio of $\frac{1}{2} : \frac{1}{3} : \frac{1}{4}$ find the share of Parthu. (in Rs)

A. 1440

B. 1080

C. 2160

D. 720

Answer: C



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6. If $9 : 12\frac{2}{3} = 81 : (x + 2)$, then what is the value of x ?

A. 112

B. 102

C. 108

D. 120

Answer: A



Watch Video Solution

7. Rs 117 was supposed to be divided among P, Q and R in the ratio 3:4:6. But, by mistake, it was divided in the ratio $\frac{1}{3} : \frac{1}{4} : \frac{1}{6}$ How many of P,Q and R gained due to this mistake?

A. 0

B. 1

C. 2

D. 3

Answer: C



Watch Video Solution

8. In a bag, the number of Rs 10 notes, Rs 20 notes and Rs 50 notes are in the ratio 5:4:3. the total value of the notes in it is Rs 280. find the number of Rs. 10 notes in it.

A. 4

B. 5

C. 3

D. 2

Answer: B



Watch Video Solution

9. If $x : y = 3 : 2$ then find $(4x + 5y) : (2x + 7y)$.

A. 11 : 10

B. 10 : 7

C. 7 : 13

D. 10 : 11

Answer: A



Watch Video Solution

10. If $\frac{b + a}{b - a} = \frac{11}{5}$, find the value of $\frac{a}{b}$.

A. 7

B. $\frac{15}{7}$

C. $\frac{3}{8}$

D. $\frac{8}{3}$

Answer: C



Watch Video Solution

11. Present ages of A and B are in the ratio 7:4, which of the following can be the difference between their ages after 8 years?

A. 5 years

B. 10 years

C. 15 years

D. 20 years

Answer: C



Watch Video Solution

12. Which of the following will result in 10,20,19 and 40 being in proportion?

A. Add one to 10.

B. Add one to 20.

C. Add one to 19.

D. Add one to 40.

Answer: C



Watch Video Solution

13. if $\frac{x + y}{x + y + z} = \frac{y + z}{x + y + z} = \frac{x + z}{x + y + z} = p$,

then which of the following can be the value of p ?

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

B. 2

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

D. 3

Answer: C



Watch Video Solution

14.

if

$$x = \frac{a - b}{a + b + c + d} = \frac{b - c}{a + b + c + d} = \frac{c - d}{a + b + c + d}$$
$$= \frac{d - a}{a + b + c + d}, \text{ then find } x^3.$$

A. 1

B. 8

C. 0

D. 27

Answer: C



Watch Video Solution

15. if the ratio of the ages (in years) of A and B, 5 years ago was 5:7, then which of the following can be the sum of their ages 5 years from now?

A. 90

B. 98

C. 92

D. 87

Answer: C



Watch Video Solution

16. One day, the ratio of the number of first class and second class passengers who travelled were in the ratio 1:30. the ratio of the first and second class fares is 3:1. the total amount collected from the passengers that day was Rs 66000. find the amount collected from the first class passengers (in Rs)

- A. 3000
- B. 6000
- C. 9000
- D. 12000

Answer: B



Watch Video Solution

17. In a bag, the numbers of Re 1 coins, 50 paise coins and 25 paise coins are in the ratio 3:2:4. the total value of the coins in it is Rs 50. Find the number of 50 paise coins in it.

A. 10

B. 20

C. 30

D. 40

Answer: B



Watch Video Solution

18. Incomes of A and B are Rs 3500 and Rs 4200 respectively. The ratio of the savings of A and B is 4:3 and the ratio of their expenditures is 3:4. find the savings of A.

A. Rs. 800

B. Rs. 600

C. Rs. 900

D. Rs. 1000

Answer: A



Watch Video Solution

19. if the ratio of the ages (in years) of x and y , 8 years ago is $7:6$, then which of the following can be the sum of their ages 8 years from now?

A. 82

B. 97

C. 75

D. 94

Answer: B



Watch Video Solution

20. If $P:Q:R=2:3:4$ and $P^2 + Q^2 + R^2 = 11600$,

then find $(P + Q - R)$

A. 15

B. 16

C. 18

D. 20

Answer: D



Watch Video Solution

21. If $\frac{x}{2}$, $\frac{7}{x}$, $\frac{3x}{2}$ and $\frac{7}{3}$ are in proportion, then the value of x is _____

A. 3

B. 6

C. 9

D. 10

Answer: C



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22. If $(3a + 4b) : (3a - 4b) = (3c + 8d) : (3c - 8d)$,

then which of the following is true?

A. $ad = bc$

B. $2ad = bc$

C. $2ab = cd$

D. $ab = cd$

Answer: B



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23. If $\frac{p}{q} = \frac{r}{s} = \frac{t}{u}$ then $\frac{p^2 + r^2 + t^2}{q^2 + s^2 + u^2} =$

A. $\frac{prt}{qsu}$

B. 1

C. $\frac{p^3 + r^3 + t^3}{q^3 + s^3 + u^3}$

D. $\left(\frac{p + r + t}{q + s + u}\right)^2$

Answer: D



Watch Video Solution

24. Which of the following ratios are in ascending order?

A. 5:6, 11:13, 8:9, 7:8

B. 5: 6, 7: 8, 11: 13, 8: 9

C. 11: 13, 5: 6, 7: 8, 8: 9

D. 5: 6, 11: 13, 7: 8, 8: 9

Answer: D



Watch Video Solution

25. Given that x varies directly with the square of y .
when x is 2, y is also 2. find y when x is 8. given that it is
positive.

A. 8

B. 6

C. 4

D. 2

Answer: C



Watch Video Solution

26. Twenty men can lay a road off 50 km long in 10 days. In how many days can 15 men lay a road of 75 km long?

A. 10 days

B. 20 days

C. 30 days

D. 40 days

Answer: B



Watch Video Solution

27. Fifteen men take 30 days to complete a piece of work, working 8 hours a day. Find the time taken by 30 men to complete 5 times as much work, working 10 hours a day.

A. 30 days

B. 45 days

C. 60 days

D. 15 days

Answer: C



Watch Video Solution

28. The flow of current through a resistor varies directly with the voltage (V) across it. When voltage across the resistor is 30 volts, the flow of current through it is 5A. What is the flow of current when the voltage across it is 60 volts?

A. 10A

B. 2.5A

C. 5A

D. 20A

Answer: A



Watch Video Solution

29. For 20 Student, the mess bill for 12 days is Rs 7000.

In how many days will the mess charges to Rs 4900 for 8 students?

A. 20 days

B. 21 days

C. 22 days

D. 23 days

Answer: B



Watch Video Solution

30. Frequency of vibration of a wire varies inversely with its length. The frequency is 220 Hz when the length of the wire is 120m. Find the frequency of the wire when its length is 100 m.

A. 261

B. 262

C. 280

Answer: D



Watch Video Solution

31. if $(2x+1):(5x-1)$ is the triplicate ratio of $3:4$, then find the value of x .

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

(A) $(2x + 1) : (5x - 1) = 3^3 : 4^3$

(B) $135x - 27 = 128x + 64$

(C) $27(5x - 1) = 64(2x + 1)$

(D) $7x = 91 \Rightarrow x + \frac{91}{7} = 13$

A. ACBD

B. ABCD

C. BCAD

D. CABD

Answer: A



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32. If $A:B=3:2$, $B:C=4:3$ and $C:D=3:5$, then divide Rs 360 among A,B,C and D. the following are the steps involved in solving the above problem. Arrange them in sequential order.

$$(A) A's \text{ share} = \frac{6}{18} \times 360 = Rs120$$

$$(B) \Rightarrow A : B : C : D = 6 : 4 : 3 : 5$$

(C)

$$A : B = 3 : 2 = 6 : 3, B : C = 4 : 3 \text{ and } C : D = 3 : 5$$

(D) to divide Rs 360 among A,B,C and D, we should know the value of A:B:C:D.

A. BCDA

B. DCBA

C. DABC

D. CDBA

Answer: B



Watch Video Solution

33. If $x:15=y:6$, then find the value of $\frac{x+y}{x-y}$

The following problem. Arrange them in sequential order.

(A) Applying componendo-dividendo.

(B) Product of means=Product of extremes. ItBrgt (C)

$$\frac{x+y}{x-y} = \frac{7}{3}$$

(D) $\frac{x}{y} = \frac{5}{2}$

(E) $6x = 15y$

A. BDACE

B. BEDAC

C. BADEC

D. ABECD

Answer: B



Watch Video Solution

34. if two numbers are in the ratio $\frac{1}{15} : \frac{1}{20}$, then by what percentage is the second number less than the first? The following are the steps involved in solving the above problem. Arrange them in sequential order

(A) Difference between the two numbers is $4x-3x=x$.

(B) Given that the ratio of two numbers

$$= \frac{1}{15} : \frac{1}{20} = 20 : 15 = 4 : 3$$

Let the numbers be $4x$ and $3x$.

(C) The percentage by which the second number is

$$\text{less than the first number} = \frac{x}{4x} \times 100\% = 25\%$$

(D) i.e., the second number is x less than the first number.

A. BADC

B. BDAC

C. DBAC

D. ABDC

Answer: A



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35. If the compound ratio of $9:x$ and $(x+1):15$ is $4:5$, then find the ratio of x and $(x+9)$. The following are

the steps involved in solving the above problem.

Arrange them in sequential order.

(A) $(9x + 9)5 = 4(15x)$

(B) $9(x + 1) : 15x = 4 : 5$

(C) $x : (x + 9) = 1 : 4$

(D) $15x = 45 \Rightarrow x = 3$

A. BDAC

B. ABCD

C. DABC

D. BADC

Answer: D



Watch Video Solution

36. if the ratio of the ages (in years) of x and y , 6 years ago was $9:8$ then which of the following can be the sum of their ages 6 years from now?

A. 89 years

B. 85 years

C. 91 years

D. 92 years

Answer: D



Watch Video Solution

37. Which of the following ratios are in descending order?

A. 9:13, 7:9, 8:11, 11:14

B. 11:14, 8:11, 7:9, 9:13

C. 11:14, 7:9, 8:11, 9:13

D. 9:13, 8:11, 7:9, 11:14

Answer: C



Watch Video Solution

38. The monthly earnings and expenditures of A and B are in the ratio 5:7 and 2:1 respectively. Find A's

earning per month if the monthly savings of B is twice that of A. Also given that A saves Rs 570 every month.

A. Rs. 900

B. Rs. 950

C. Rs. 1000

D. Rs. 1050

Answer: B



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39. Runs scored by Ramu and Raju are in the ratio 4:5.

Runs scored by Raju and Ramesh are in the ratio 3:2.

How many runs did Raju score, if Ramesh scored 120 runs less than that of Ramu?

A. 800

B. 850

C. 900

D. 950

Answer: C



Watch Video Solution

40. A mixture contains milk and water in the ratio of 5:6. On adding 8 litres of water, the ratio of milk and

water becomes 1:2. find the quantity of the milk in the mixture. (in litres)

A. 12

B. 10

C. 14

D. 8

Answer: B



Watch Video Solution

41. The present ages of Aruna and Karuna are in the ratio 6:5. if the difference between their ages is 5

years, then what will be the sum of their ages after 20 years? (in years)

A. 75

B. 60

C. 95

D. 100

Answer: C



Watch Video Solution

42. If $\frac{Px}{(b-c)} = \frac{Qy}{(c-a)} = \frac{Rz}{(a-b)}$, then find

$Pax + Qby + Rcz.$

A. $P + Q + R$

B. $x + y + z$

C. $a + b + c$

D. 0

Answer: D



Watch Video Solution

43. If $x + y + z = 0$ and $\frac{x^3 + y^3}{xyz} = \frac{y^3 + z^3}{xyz} = \frac{x^3 + z^3}{xyz} = a$, then which of the following can be 'a'?

A. 2

B. 3

C. 6

D. 9

Answer: A



Watch Video Solution

44. If $\frac{a}{b} = \frac{c}{d} = \frac{e}{f}$, then $\frac{a^3 + c^3 + e^3}{b^3 + d^3 + f^3} = _ _ _$

A. 1

B. $\frac{a + c + e}{b + d + f}$

C. $\frac{(a + c + e)^2}{(b + d + f)^2}$

D. $\frac{ace}{bdf}$

Answer: D



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45. if $p = \frac{8ab}{a+b}$, then find the value of $\left(\frac{p+4a}{p-4a} + \frac{p+4b}{p-4b}\right)$.

A. 4

B. 2

C. 1

D. 3

Answer: B



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46. Twenty two men can complete a piece of work in 17 days. They work for 2 days. How many more men should now be employed so as to complete the work in another 10 days?

A. 45

B. 60

C. 57

D. 80

Answer: A



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47. Twenty two men can complete a piece of work in 17 days. They work for 2 days. How many more men should now be employed so as to complete the work in another 10 days?

A. 11

B. 22

C. 33

D. 44

Answer: A



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48. Twenty five men can make a certain number of chairs in 80 working hours. They work for 10 hours. How many more men should now be employed so as to complete the work in another 50 working hours?

A. 35

B. 25

C. 20

D. 10

Answer: D



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49. The ratio between two numbers is 3:5 and their sum is 40. Find the larger of the two numbers.

A. 15

B. 20

C. 25

D. 40

Answer: C



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50. In a bag, the number of Rs 10 notes, Rs 20 notes and Rs 50 notes are in the ratio 5:4:3. the total value of the notes in it is Rs 280. find the number of Rs. 10 notes in it.

A. 4

B. 5

C. 3

D. 2

Answer: B



51. Which of the following ratios are in descending order?

A. $12 : 17, 9 : 13, 7 : 11, 13 : 19$

B. $12 : 17, 7 : 11, 13 : 19, 9 : 13$

C. $12 : 17, 9 : 13, 13 : 19, 7 : 11$

D. $12 : 17, 13 : 19, 9 : 13, 7 : 11$

Answer: C



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52. Raja divided 35 sweets among his daughters Rani and Sita in the ratio 4:3. How many sweets did Rani get?

A. 16

B. 24

C. 28

D. 20

Answer: D



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53. In a bag, the numbers of Re 1 coins, 50 paise coins and 25 paise coins are in the ratio 3:2:4. the total value of the coins in it is Rs 50. Find the number of 50 paise coins in it.

A. 10

B. 20

C. 30

D. 40

Answer: B



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54. if $P:Q:R = 2:3:4$ and $P^2 + Q^2 + R^2 = 11600$, then find $P+Q+R$, where P, Q and R are whole numbers.

A. 15

B. 16

C. 18

D. 20

Answer: D



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55. The age of a boy is one-fifth of the age of his mother and the sum of the ages of the son and the mother is equal to the age of the father. After 15 years, the sum of the ages of the son and his mother will be four-third of his father's age. Find the ratio of the present ages of son, mother and father respectively.

A. $1:5:7$

B. $2:10:10$

C. $1:5:6$

D. $2:8:9$

Answer: C



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56. In a school, maximum strength of each class is 60. In class VIII, the total number of students is a multiple of 5. On a certain day, four boys were absent and the ratio of the numbers of the remaining boys to that of girls was 5:4. Find the ratio of the total boys to that of girls.

A. 3:2

B. 4:3

C. 2:1

D. 5:4

Answer: A



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57. If $x = \frac{4\sqrt{2}}{\sqrt{2} + 1}$, then find the value of $\frac{x + 2}{x - 2} - \frac{x + 2\sqrt{2}}{x - 2\sqrt{2}}$.

A. 2

B. $12 + 8\sqrt{2}$

C. $12 - 8\sqrt{2}$

D. -2

Answer: B



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58. A diamond worth Rs 640000 breaks into two pieces whose weights are in the ratio 5:3. If the value of the diamond varies directly with square of its weight, then find loss incurred due to breakage (in Rs).

A. 320000

B. 300000

C. 360000

D. 380000

Answer: B



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59. In a vessel, the pressure of a gas varies directly with its temperature, if its volume is kept constant, when the pressure is increased from 1 atm to 3 atm, then the temperature increases from 273 K to 'x' K. What is the value of x, if volume is kept constant?

- A. 91 K
- B. 546 K
- C. 819 K
- D. 900 K

Answer: C



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60. In a school there are 650 students. The ratio of the boys to that of the girls is 8:5. How many more girls should join the school so that the ratio becomes 4:3?

A. 25

B. 50

C. 100

D. 200

Answer: B



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