

Multiple Choice Questions

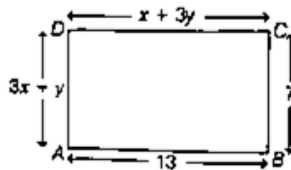
(1 mark each)

- If the total depreciation of machinery and equipment in one year is ₹ 8000 and the ratio of the amount of depreciation of machinery and equipment is 1 : 3, then the rate of depreciation of equipment is
(a) 10% (b) 20% (c) 75% (d) None of these
- The number of common solutions for the system of linear equations $5x + 4y + 6 = 0$ and $10x + 8y = 12$ is
(a) 0 (b) 1 (c) 2 (d) None of these
- A man rows upstream at 7 km/h and downstream at 10 km/h. Then, the man's speed in still water and the rate of current respectively, are
(a) 6.5 km/h and 3.5 km/h (b) 8.5 km/h and 1.5 km/h
(c) 6 km/h and 4 km/h (d) 7 km/h and 3 km/h
- A fraction becomes $\frac{4}{5}$ when 1 is added to each of the numerator and denominator. However, if we subtract 5 from each of them, it becomes $\frac{1}{2}$. Then, the numerator of fraction is
(a) 6 (b) 7 (c) 8 (d) 9
- The pair of linear equation $x + 2y = 5$ and $3x + 12y = 10$ has
(a) unique solution (b) no solution
(c) more than two solutions (d) infinitely many solutions

Short Answer Type (I) Questions

(2 marks each)

- Write the nature of the graph of the equations $6x - 2y + 9 = 0$ and $3x - y + 12 = 0$.
- If $31q + 47p = 18$ and $31p + 47q = 60$, then find the value of $p + q$.
- Find the values of α and β for which the following system of linear equations has infinite number of solutions
 $2x + 3y = 7$ and $2\alpha x + (\alpha + \beta)y = 28$.
- For all real values of c , the pair of equations $x - 2y = 8$, $5x + 10y = c$ has a unique solution. Justify whether it is true or false.
- 7 audio cassettes and 3 video cassettes cost ₹ 1110. 5 audio cassettes and 4 video cassettes cost ₹ 1350. Find the cost of an audio cassette and a video cassette.
- In the given figure, $ABCD$ is a rectangle. Find the values of x and y .



Short Answer Type (II) Questions

(3 marks each)

- A lending library has a fixed charge for the first three days and an additional charge for each day thereafter and Saritha paid ₹ 27 for a book kept for seven days, while Susy paid ₹ 21 for the book she kept for five days. Find the fixed charge and the charge for each extra day.
- Solve the following system of equation for x and y by using the method of elimination.
 $0.4x + 0.3y = 1.7$ and $0.7x - 0.2y = 0.8$
- The ratio of incomes of two persons is 9 : 7 and the ratio of their expenditures is 4 : 3. If each of them manages to save ₹ 2000 per month, then find their monthly income.

Long Answer Type Questions

(5 marks each)

15. The numerator of a fraction is 4 less than the denominator. If the numerator is decreased by 2 and the denominator is increased by 1, then the denominator is eight times the numerator. Find the fraction.
16. Draw the graph of the pair of equations $2x + y = 4$ and $2x - y = 4$. Write the vertices of the triangle formed by these lines and the Y-axis. Find the area of this triangle.
17. Ramu sold a television set and a mobile phone for ₹ 10500, thereby making a profit of 10% on the television set and 25% on the mobile phone. If he had taken a profit of 25% on the television set and 10% on the mobile phone, he would have got ₹ 10650, then find the cost of each item.

Answers

1. (c) 2. (a) 3. (b) 4. (b) 5. (a)
6. Parallel 7. $q + q = 1$
8. $\alpha = 4$ and $\beta = 8$ 9. True
10. The cost of one audio and one video cassette are ₹ 30 and ₹ 300, respectively.
11. $x = 1$ and $y = 4$ 12. Fixed charge for first three days = ₹ 15 and extra charge for each day = ₹ 3.
13. $x = 2$ and $y = 3$ 14. ₹ 1800, ₹ 14000 15. $\frac{3}{7}$
16. 8 sq units 17. Cost price of television = ₹ 5000, Cost price of mobile phone = ₹ 4000

For Solution
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