



MATHEMATICS

CHAPTER 3 PAIR OF LINEAR EQUATION IN TWO VARIABLES

Name: _____

Date: _____

Class: X Sec: ____

1. A fraction becomes $\frac{4}{5}$ if 1 is added to both numerator and denominator. If, however, 5 is subtracted from both numerator and denominator, the fraction becomes $\frac{1}{2}$. Find the fraction.
2. Joseph travelled 300 km by train & 200 km by taxi, it took him 5 hrs 30 mins. But if he travels 260 km by train and 240 km by taxi, he takes 6 mins longer. Find the speed of the train and that of taxi.
The taxi charges is a city comprise of a fixed charge together with the charge for the distance covered. For a journey of 20 km the charge paid is Rs. 170 and for a journey of 30 km the charge paid is Rs 250. Find the charge for travelling 70 km.
3. Points A and B are 120 km apart from each other on a highway. A car starts from A and another from B at the same time. If they go in same direction they meet in 6 hrs. & if this go in opposite direction they meet in $\frac{6}{5}$ hrs. Find their
4. The ratio of income of two persons is 9 : 7 and the ratio of their expenditures is 4 : 3. If each of them saves Rs. 2000 per month, find their monthly incomes.
5. The sum of a two digit number and the number obtained by reversing the order of its digits is 121. If the digits differ by 3, find the number.
6. Solve : $5(2U + V) = 9UV$
and $5(U + 3V) = 13UV$, where $U \neq 0, V \neq 0$
7. The sum of a two digit number and the number obtained by reversing the digit is 132. If 12 is added to the number, the number becomes 5 times the sum of the digits
8. Solve for x & y : $\frac{x}{b} + \frac{y}{a} = 2$
 $bx - ay = b^2 - a^2$
9. Solve the following:
 $\frac{1}{x} + \frac{1}{y} + \frac{1}{z} = 36; \frac{1}{x} + \frac{3}{y} - \frac{1}{z} = 28; \frac{1}{x} + \frac{1}{3y} + \frac{1}{2z} = 20.$
10. A boat goes 12 km upstream and 14 km downstream in 3 hrs. It goes 15 km upstream & 10.5 km downstream in 3 hrs 15 mins. Find the speed of the boat in still water
Solve the following system of linear equations:
11. $(a - b)x + (a + b)y = a^2 - 2ab + b^2$
 $(a + b)(x + y) = a^2 + b^2$
12. Solve: $\frac{x}{3} + y = 0.6$



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$$\frac{4}{x - \frac{y}{2}} = 10$$

14. A man has 60 notes in all of Rs 10 and Rs 20 denomination. If the total worth of notes is Rs 800, find how many notes of each type?
For what values of k will the following pair of linear equations have infinitely many solutions?
15. $kx + 3y - (k - 3) = 0$; $12x + ky - k = 0$