

STD XEXTRA SUGGESTIVE QUESTIONS

(1) Solve the following system of equations:

$$(a - b)x + (a + b)y = a^2 - 2ab - b^2 ; \quad (a + b)(x + y) = a^2 + b^2 \quad \text{Ans: } x = (a + b) \text{ and } y = \frac{-2ab}{a + b}$$

(2) Solve for x and y : $37x + 43y = 123$; $43x + 37y = 117$ Ans: $x = 1$ and $y = 2$

(3) Solve for x and y : $\frac{x}{a} + \frac{y}{b} = a + b$, $\frac{x}{a^2} + \frac{y}{b^2} = 2$ Ans $x = a^2, y = b^2$

(4) Solve for x and y : $\frac{2}{3x + 2y} + \frac{3}{3x - 2y} = \frac{17}{5}$; $\frac{5}{3x + 2y} + \frac{1}{3x - 2y} = 2$ Ans $x = y = 1$

(5) Find the values of m and n for which the following system of linear equations has infinitely many solutions:
 $3x + 4y - 12 = 0$, $(m + n)x + 2(m - n)y = (5m - 1)$ Ans $m = 5$ and $n = 1$

(6) Find the value of k for which the pair of linear equations has no solution.

$$(3k + 1)x + 3y - 2 = 0, \quad (k^2 + 1)x + (k - 2)y - 5 = 0 \quad \text{Ans } k = -1$$

(7) Solve for x and y :

$$6x + 3y = 7xy, \quad 3x + 9y = 11xy \quad (x \neq 0 \text{ and } y \neq 0) \quad \text{Ans } x = 1 \text{ and } y = \frac{3}{2}$$

(8) Solve for x and y : $\frac{2}{\sqrt{x}} + \frac{3}{\sqrt{y}} = 2$, $\frac{4}{\sqrt{x}} - \frac{9}{\sqrt{y}} = -1$ ($x \neq 0$ and $y \neq 0$) Ans $x = 4$ and $y = 9$

**Make a pair of linear equation in two variables and solve.(Use all the 4 methods to solve them)

(9) A two digit number is such that the product of its digits is 14. If 45 is added to the number, the digits interchange their places. Find the number. Ans 27

(10) Five years ago, A was thrice as old as B and 10 years later A shall be twice as old as B. What are the present ages of A and B? Ans A = 50 years, B = 20 years

(11) The length of a room exceeds its breadth by 3 m. If the length is increased by 3 m and breadth is decreased by 2 m, the area remains the same. Find the length and breadth of the room. Ans $l = 15$ m, $b = 12$ m

(12) A railway half ticket costs half of the full fare and the reservation charge is the same on half ticket as on full ticket. One reserved first class ticket from Mumbai to Delhi costs Rs 4150 while one full and one half reserved first class tickets cost Rs 6255. What is the basic first class full fare and what is the reservation charge?
 1st class = Rs 4090 and Reservation charge = Rs 60

(13) A sailor goes 8 km downstream in 40 minutes and returns in 1 hr. Find the speed of the sailor in still water and the speed of the current. Ans 10 km per h and 2 km per h.

(14) The sum of two numbers is 16 and the sum of their reciprocals is $\frac{1}{3}$. Find the numbers. Ans 12 and 4

(15) The monthly incomes of A and B are in the ratio 5:4 and their monthly expenditures are in the ratio 7:5. If each saves Rs 9000 per month, find their monthly income for each. Ans Rs 30000, Rs 24000.

