

# INTERNATIONAL INDIAN SCHOOL BURAIDAH

Worksheet for the Academic Year 2024-25

CLASS: X SUBJECT: MATHEMATICS DATE: 12-05-2024

LESSON:03 – PAIR OF LINEAR EQUATIONS IN TWO VARIABLES

## Level1:

- The solution of the pair of linear equations  $x = -5$  and  $y = 6$  is -----  
(Ans: (-5,6))
- The value of  $k$  for which the system of linear equations  $kx + 2y = 5$  and  $3x + 4y = 1$  have no solution is  
(Ans:  $\frac{3}{2}$ )
- If  $217x + 131y = 913$ ,  $131x + 217y = 827$ . then  $x + y$  is  
(Ans: 5)
- Find the value(s) of  $k$  so that the pair of linear equations  $x + 2y = 5$  and  $3x + ky + 15 = 0$  has a unique solution.  
(Ans:  $k \neq 6$ )
- Determine the values of  $a$  and  $b$ , for which the following pairs of linear equations has infinitely many solutions.  
$$3x - (a+1)y = 2b - 1$$
 and  
$$5x + (1-2a)y = 3b$$
  
(Ans:  $a = 8, b = 5$ )
- Check whether the pair of linear equations are consistent or inconsistent:
  - $3x - 5y = 20$  and  $6x - 10y = -40$  (inconsistent)
  - $2x + 3y = 6$  and  $4x + 6y = 12$  (Consistent)
  - $5x + 7y = 12$  and  $4x - 2y = 10$  (Consistent)
- Solve graphically:
  - $x - y + 1 = 0$  and  $3x + 2y - 12 = 0$
  - $x - 2y + 11 = 0$  and  $3x - 6y + 33 = 0$
- Solve graphically and shade the region between the two lines and  $y$ -axis:  
 $2x + 3y = 12$  and  $x - y = 1$
- Solve the following pair of equations by substitution method:
  - $3x - 5y = -1$  and  $x - y = -1$  (Ans:  $x = -2, y = -1$ )
  - $\sqrt{2}x + \sqrt{5}y = 0$  and  $\sqrt{6}x + \sqrt{15}y = 0$
  - $3x - \frac{y+7}{11} = 8$  and  $2y + \frac{x+11}{7} = 10$  (Ans:  $x = 3, y = 4$ )
- Solve the following pair of equations by elimination method:
  - $8x + 5y = 9$  and  $3x + 2y = 4$  (Ans:  $x = -2, y = 5$ )
  - $0.4x + 0.3y = 1.7$  and  $0.7x - 0.2y = 0.8$  (Ans:  $x = 2, y = 3$ )
  - $\frac{x}{10} + \frac{y}{5} + 1 = 15$  and  $\frac{x}{8} + \frac{y}{6} = 15$  (Ans:  $x = 80, y = 30$ )

11. 5 years ago, Amit was thrice as old as Baljeet. 10 years hence, Amit shall be twice as old as Baljeet. What are their present ages?  
(Ans: Amit-50yrs & Baljeet- 20 yrs)
12. The denominator of a fraction is 4 more than twice the numerator. When both the numerator and denominator are decreased by 6, then the denominator becomes 12 times the numerator. Determine the fraction. (Ans:  $\frac{7}{18}$ )
13. In a two-digit number, the unit's digit is twice the ten's digit. If 27 is added to the number, the digits interchange their places. Find the number. (Ans: 36)

**Level 2:**

14. The incomes of two persons A and B are in the ratio 8:7 and the ratio of their expenditures is 19: 16. If their savings are ₹ 2550 per month, Find their monthly income. (Ans: 12240 and 10710)
15. In a painting competition of a school a child made an Indian flag whose perimeter was 50cm. Its area will be decreased by 6 square cm, if the length is decreased by 3cm and the breadth is increased by 2cm then find the dimension of the flag (Ans: l = 15cm, b = 10cm)
16. A railway half ticket cost half the full fare, but the reservation charges are the same on a half ticket as on a full ticket. One reserved first-class ticket from stations A to B costs ₹2530. Also, one reserved first-class ticket and one reserved first-class half ticket from stations A to B costs ₹3810. Find the full first-class fare from stations A to B also the reservation charges for a ticket. (Ans: ₹2500, ₹30)

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