INTERNATIONAL INDIAN SCHOOL BURAIDAH

Worksheet -2025-26

Class-X

Subject: Mathematics

Chapter 03:Pair of linear equation in two variable

Level-1

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

11. Cost of burger is ₹ 20 more than the cost of juice of glass of orange .if cost of one burger and one glass of orange juice is ₹ 60 .find the cost of each (Ans Cost of burger ₹ 40 and orange juice ₹ 20)
12. 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)

13. 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: 7/18)
14. 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:

15. 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 3 2550 per month, Find their monthly income. (Ans: 12240 and 10710)
16. 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)
17. 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)

18-Check graphically whether the pair of equations $3x - 2y + 2 = 0$ and $\frac{3}{2}x - y + 3 = 0$ is consisitent.Also find the coordinates of the points where the graphs of the equation meet the Y-axis (Ans (0,1) and (0,3)

19-Solve the following system of linear equations graphically : $x - y + 1 = 0$ and $3x + 2y - 12 = 0$.

Calculate the area of the region bounded by these lines and the X-axis. (Ans : x=2 and y=3 , Area 7.5 sq units.)

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

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