PRACTICE QUESTIONS (LINEAR EQUATIONS IN TWO VARIABLES)
CLASS: X : MATHEMATICS

1. Find the value of k for which system of equation 2x + 3y = 5 and 4x + ky = 10 has infinite number of solutions.

2. Check the consistency of the pair of linear equations 2x + 3y = 5 and 4x + 6y = 10.

3. Find the number of solutions of the pair of equations x + 2y + 5 = 0 and –3x – 6y + 1 = 0.

4. Given the linear equation 3x + 4y – 8 = 0, write another linear equation in two variables such that the geometrical representation of the pair so formed is parallel lines.

5. Find whether the following pair of linear equations is consistent or in consistent: 3x + 2y = 8 and 6x – 4y = 9.

6. Find the value of k for which the lines 5x + 7y = 3 and 15x + 21y = k coincides.

7. If x = a and y = b is the solution of the pair of equations x – y = 2 and x + y = 4, find the values of a and b.

8. If the system of equations 6x – 2y = 3 and kx – y = 2 has a unique solution, find k.

9. For what values of k will the following pair of linear equations have infinitely many solutions? kx + 3y – (k – 3) = 0 and 12x + ky – k = 0

10. Determine the values of a and b for which the following system of linear equations has infinite solutions: 2x – (a – 4) y = 2b + 1; 4x – (a – 1) y = 5b – 1

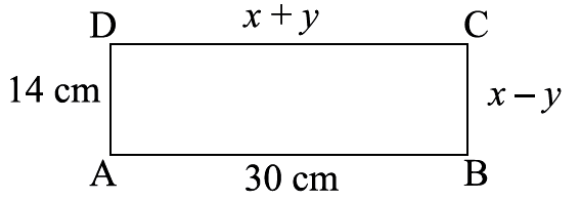
11. For what value of k will the following system of linear equations have no solution? 3x + y = 1; (2k – 1) x + (k – 1) y = 2k + 1

12. For what value of k for which the following pair of linear equations have infinitely many solutions: 2x + 3y = 7, (k – 1)x + (k + 2)y = 3k is

13. For what value of k, do the equations 3x – y + 8 = 0 and 6x - ky =–16 represent coincident lines

14. Solve: 2x + 3y = 11 and 2x – 4y = – 24

15. In figure, ABCD is a rectangle. Find the values of x and y.



16. Solve the following pair of linear equations: 21x + 47y = 110 and 47x + 21y = 162

17. If 217x + 131y = 913, 131x + 217y = 827, then find the value of x and y

18. Half the perimeter of a garden, whose length is 4 more than its width is 36 m. Find the dimensions of the garden.

19. Draw the graphs of the equations $x - y + 1 = 0$ and $3x + 2y - 12 = 0$. Determine the co-ordinates of the vertices of the triangle formed by these lines and x-axis. Shade the triangular region.

20. Draw the graph $x - y + 1 = 0$ and $2x + y - 10 = 0$. Shade the region bounded by these lines and x-axis. Find the area of the shaded region.

21. A natural number, when increased by 12, equals 160 times its reciprocal. Find the number.

22. Find a natural number whose square diminished by 84 is equal to thrice of 8 more than the given number.

23. The sum of the digits of a two-digit number is 9. Also 9 times this number is twice the number obtained by reversing the order of the digits. Find the number.

24. A train covered a certain distance at a uniform speed. If the train would have been 6 km/h faster, it would have taken 4 hours less than the scheduled time. And, if the train were slower by 6 km/hr; it would have taken 6 hours more than the scheduled time. Find the length of the journey.

25. Anuj had some chocolates, and he divided them into two lots A and B. He sold the first lot at the rate of ₹2 for 3 chocolates and the second lot at the rate of ₹1 per chocolate, and got a total of ₹400. If he had sold the first lot at the rate of ₹1 per chocolate, and the second lot at the rate of ₹4 for 5 chocolates, his total collection would have been ₹460. Find the total number of chocolates he had.

26. The area of a rectangle gets reduced by 9 square units, if its length is reduced by units and breadth is increased by 3 units. If we increase the length by 3 units and the breadth by 2 units, the area increases by 67 square units. Find the dimensions of the rectangle.

27. Five years ago, Nuri was thrice as old as Sonu. Ten years later, Nuri will be twice as old as Sonu. How old are Nuri and Sonu?

28. A part of monthly hostel charges in a college is fixed and the remaining depends on the number of days one has taken food in the mess. When a student 'A' takes food for 22 days, he has to pay Rs. 1380 as hostel charges; whereas a student 'B', who takes food for 28 days, pays Rs. 1680 as hostel charges. Find the fixed charges and the cost of food per day.

29. Meena went to a bank to withdraw Rs 2,000. She asked the cashier to give her Rs. 50 and Rs. 100 notes only. Meena got 25 notes in all. How many notes of Rs. 50 and Rs. 100 she received?

30. The ratio of income of two persons is 9 : 7 and the ratio of their expenditure is 4 : 3, if each of them manage to save Rs. 2000/month. Find their monthly incomes.