PAIR OF LINEAR EQUATIONS IN TWO VARIABLE

1. The pair of equations $x = 3$ and $y = -2$ graphically represent lines which are :
   (A) coincident (B) parallel
   (C) intersecting at $(3, -2)$ (D) intersecting at $(-3, 2)$

(errors · eraser)

2. The x-coordinate of the point which lies on the line represented by $3x - y - 1 = 0$ and whose y-coordinate is 5, is :
   (A) –2 (B) 2 (C) 5 (D) –5

3. Solve the following pair of linear equations : $2x + 3y = 12$; $x - 2y = -1$

4. A system of linear equations is given by :

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   $a_1x + b_1y = c_1$
   $a_2x + b_2y = c_2$, where $a_1 / a_2 = b_1 / b_2$ and $(a_1, a_2, b_1, b_2 \neq 0)$.
   Which of the following statements is true ?
   (A) The given system has a unique solution.
   (B) The given system has no solution.
   (C) The given system has infinite number of solutions.
   (D) The given system has no solution or has infinite number of solutions.

5. Solve : $x + 2y = 6$, $2x + y = 6$ and hence find the value of p for which $y = px + 2$.

6. Solve the following system of linear equations graphically :
   $x + 2y = 6$ and $3x - 2y = 2$

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   Also, write the coordinates of the vertices of the triangle formed by these lines and y-axis.

7. The system of equations given by : $2x - 3y = 5$, $6x + 9y = 15$
   (A) has a unique solution
   (B) has no solution
   (C) has infinitely many solutions
   (D) may have infinitely many solutions or no solution

8. Solve for x and y : $23x + 24y = 23$, $24x + 23y = 24$

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9. If the system of equations $2x + 3y = 5$ and $4x + ky = 10$ has infinitely many solutions, then the value of 'k' is :

10. Solve for x and y :
    $x + y/2 = 4$ and $x/3 + 2y = 5$

11. The value of 'k' for which the lines represented by the equations $3x + 5y = 2$ and $9x + 15y = 2k$ coincide, is :
    (A) 3 (B) – 3 (C) 6 (D) – 6

12. If 3 chairs and 1 table cost ₹ 900 and 5 chairs and 3 tables ₹ 2100, then the cost of one

chair is :
(A) ₹ 100 (B) ₹ 110 (C) ₹ 150 (D) ₹ 450

13. Solve the following pair of linear equations :
$2x - 3y - 17 = 0$ and $4x + y - 13 = 0$

14. A lending library has a fixed charge for the first three days and an additional charge for each day thereafter. Sarita paid ₹ 27 for a book kept for seven days, while Ravi paid ₹ 24 for a book he kept for six days. Find the fixed charge and the charge for each extra day.

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15. The value of 'k' for which the pair of linear equations $5x + 2y = 7$ and $2x + ky = -1$ do not have a solution, is :

16. Check whether the point (-4,3) lies on both the line represented by the linear pair of Equation $x + y + 1 = 0$ and $x - y = 1$

17. The graph of a pair of lineare quations $a_1x + b_1y = c_1$ and $a_2x + b_2y = c_2$ in two variables x and y represents parallel lines, if the condition is:

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18. The sum of two natural numbers is 70 and their difference is 10. Find the natural numbers.

19. The sum of the digits of a 2-digit number is 9. Also, nine times this number is twice the number obtained by reversing the order of the digits. Find the number.

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20. Using graphical method, solve the following pair of equations :
$x + 2y = 8$ and $3x - 2y = 12$

21. The lines represented by linear equations $x = a$ and $y = b$ $(a \neq b)$ are
(A) intersecting at (a, b). (B) intersecting at (b, a).
(C) parallel. (D) coincident.

22. Deepankar bought 3 notebooks and 2 pens for Rs 80 and his friend Suryansh bought 4 notebooks and 3 pens for Rs 110 from the school bookshop.
Based on the above information, answer the following questions.
(i) If the price of one notebook be Rs x and the price of one pen be Rs y, write the given situation algebraically.

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(ii) (a) What is the price of one notebook ?
OR
(b) What is the price of one pen ?
(iii) What is the total amount to be paid by Suryansh, if he purchases 6 notebooks and 3 pens ?

23. The pair of linear equations $2kx + 5y = 7$, $6x + 5y = 11$ have a unique solution, if K = ?

(errors - eraser)

24. The ratio of monthly incomes of two persons is 9 : 7 and the ratio of their expenditures is 4 : 3. If each of them manages to save Rs 2,000 per month, then find their monthly incomes.

25. The pair of linear equations $5x + 4y = 20$ and $10x + 8y = 16$ has :
(a) no solution
(b) infinite number of solutions
(c) a unique solution
(d) two solutions

26. Solve the pair of linear equations, $2x + y = 2$ and $4x + y = 4$, graphically.

27. 5 chairs and 1 table together cost Rs 1,750; while 4 chairs and 3 tables together cost Rs 1,950. Find the cost of one chair and of one table. What would be the total cost of 10 chairs and 10 tables ? (errors · eraser)

28. Solve the following pair of equations : $x - y + 1 = 0$; $3x + 2y - 12 = 0$

29. Solve for x and y : $x + y = 6$, $2x - 3y = 4$

30. Find out whether the following pair of equations are consistent or inconsistent
$5x - 3y = 11$, $-10x + 6y = 22$ (errors · eraser)

31. Find the values of 'a' and 'b' for which the system of linear equations
$3x + 4y = 12$, $(a + b)x + 2(a - b)y = 24$ has infinite number of solutions.

32. If the pair of linear equations $x - y = 1$, $x + ky = 5$ has a unique solution $x = 2$, $y = 1$, then the value of k is :
(errors · eraser)

33. Sabina went to a bank ATM to withdraw Rs 2,000. She received 50 and 100 notes only. If Sabina got 25 notes in all, how many notes of 50 and 100 did she receive ?

34. If the lines represented by equations $3x + 2my = 2$ and $2x + 5y + 1 = 0$ are parallel, then the value of m is :

35. Five years ago, Amit was thrice as old as Baljeet. Ten years hence, Amit shall be twice as old as Baljeet. What are their present ages ? (error · eraser)

36. Lokesh, a production manager in Mumbai, hires a taxi everyday to go to his office. The taxi charges in Mumbai consists of a fixed charges together with the charges for the distance covered. His office is at a distance of 10 km from his home. For a distance of 10 km to his office, Lokesh paid 105 rupees. While coming back home, he took another route. He covered a distance of 15 km and the charges paid by him were 155 rupees. Based on the above information, answer the following questions:
(1) What are the fixed charges? (errors · eraser)
(ii) What are the charges per km?
(iii) If fixed charges are 20 rupees and charges per km are 10 rupees , then how much

Lokesh have to pay for travelling a distance of 10 km?
(iv) Find the total amount paid by Lokesh for travelling 10 km from home to office and 25 km from office to home.

37. Solve the pair of equation $x = 3$ and $y = -4$ graphically.

38. Using graphical method , find whether following system of linear equation is consistent or not: $x = 0$ and $y = -7$

39. Half of the difference between two numbers is 2 . The sum of the greater number and twice the smaller number13. Find the numbers.

40. Solve the pair of equation $x = 5$ and $y = 7$ graphically

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41. The pair of equations $x = a$ and $y = b$ graphically represents lines which are :
(a) parallel (b) intersecting at (b, a) (c) coincident (d) intersecting at (a, b)

42. If the system of linear equations $2x + 3y = 7$ and $2ax + (a + b)y = 28$ have infinite number of solution , then find value of a and b .

43. The pair of equations $ax + 2y = 9$ and $3x + by = 18$ represent parallel lines, where a, b are integers, if :
(a) $a = b$ (b) $3a = 2b$ (c) $2a = 3b$ (d) $ab = 6$

(errors - eraser)

44. 3 chairs and 1 table cost Rs 900 where as 5 chairs and 3 tables cost Rs2100. If the cost of chair is x and the cost of table is y then the situation can be represented algebraically as

45. The value of t for which the pair of linear equations
$(t + 3)x - 3y = t$; $tx + ty + 12 = 0$ have infinitely many solutions, is :

46. Solve the following pair of linear equations by
Elimination method : $7x - 2y = 3$; $11x - 3/2y = 8$.

47. Solve for x and y :
$(Ax/b) + (by / a) = a - b$, $ax - by = 2ab$

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48. Draw the graph of the following equations : $x + y = 5$, $x - y = 5$, and
(i) find the solution of the equations from the graph.
(ii) shade the triangular region formed by the lines and the y-axis.

49. Graphically, the pair of equations $6x + 2y = 21$ and $2x - 3y + 7 = 0$ represents two lines which are :
(a) intersecting exactly at one point (b) intersecting exactly at two points
(c) coincident (d) parallel

50. If one equation of a pair of dependent equations is (errors - eraser)
$-3x + 5y = 4$, then the second equation can be :

(a) $6x + 10y = 8$
(b) $9x - 15y + 12 = 0$
©- $9x + 15y = -12$
(d) $-6x - 10y = 8$

51. The solution of the pair of linear equations
$2x/3 - y/2 = -1/6$ and $x/2 + 2y/3 = 3$ is :

52. The monthly incomes of A and B are in the ratio 8 : 7 and their expenditures are in the ratio 19 : 16. If each saves Rs 2500 per month, find the monthly income of each.

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53. In the given figure, graphs of two linear equations are shown. The pair of these linear equations is :
(A) consistent with unique solution.
(B) consistent with infinitely many solutions.
(C) inconsistent.
(D) inconsistent but can be made consistent by extending these lines.

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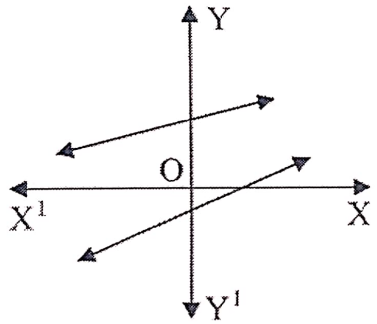

54. Tara scored 40 marks in a test, getting 3 marks for each Right answer and losing1mark for each wrong answer. Had 4 marks been Awarded for each correct answer and 2 marks been deducted for each wrong answer, then Tara would have scored 50 marks. Assuming That Tara attempted all questions, find the total number of questions In the test.

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55. Two lines are given to be parallel. The equation of one of these lines is
$5x - 3y = 2$. The equation of the second line can be :
(A) $-15x - 9y = 5$ (B) $15x + 9y = 5$
(C) $9x - 15y = 6$ (D) $-15x + 9y = 5$

56.The product of the digits of a 2-digit number is 18. When 27 is subtracted from the number, the digits interchange their places. Find the number. (errors eraser)