

**PAIR OF LINEAR EQUATION IN TWO VARIABLE WS 2**

**Class 10 - Mathematics**

1. Match the following: [2]

(a) The equation of a line which is parallel to $2x + 3y = 6$ is	(i) $4x + 6y = 12$
(b) The equation of a line which is intersecting to $2x + 3y = 6$ is	(ii) $12x + 13y = 12$
(c) The equation of a line which is coincident to $2x + 3y = 6$	(iii) $2x + 3y = 12$
(d) The equation of a line which is not coincident to $3x + 3y = 13$ is	(iv) $4x + 3y = 6$

2. Match the column: [2]

(a) The equation representing y-axis	(i) 15
(b) The equation representing x-axis	(ii) $y = 0$
(c) The distance between the graph of the equation $y = -1$ and $y = 3$	(iii) $x = 0$
(d) If $p = 100r - t$ , at $r = 0.25$ and $t = 10$ , $p =$	(iv) 4 unit

3. Match the column: [2]

(a) If the point (1, 2) lies on the line $2x + ay = 8$ , then $a =$	(i) 1
(b) The number of solutions of the equation $x + 5y = 11$ , where $x, y$ are natural number is (are)	(ii) 5
(c) The number of the line passing through (3, 4) and parallel to the x-axis is (are)	(iii) 2
(d) The value of $b$ so that the point (5, $b$ ) lies on the line represent by $2x - 3y + 5 = 0$ is	(iv) 3

4. On comparing the ratios  $\frac{a_1}{a_2}$ ,  $\frac{b_1}{b_2}$  and  $\frac{c_1}{c_2}$ , find out whether the pair of linear equations are consistent, or inconsistent:  $\frac{3}{2}x + \frac{5}{3}y = 7$ ,  $9x - 10y = 14$  [2]

5. Given the linear equation  $3x + 4y = 9$ . Write another linear equation in these two variables such that the geometrical representation of the pair so formed is : [2]

- i. intersecting lines
- ii. coincident lines

6. For what value of  $k$  the following system of equations will be inconsistent? [2]

$$4x + 6y = 11$$

$$2x + ky = 7$$

7. Is the pair of linear equation consistent? Justify your answer. [2]

$$x + 3y = 11, 2(2x + 6y) = 22$$

8. For all real values of  $c$ , the pair of equations [2]

$$x - 2y = 8$$

$$5x - 10y = c$$

have a unique solution or not, justify your answer.

9. Is the pair of linear equation consistent/inconsistent? If consistent, obtain the solution graphically:  $x - y = 8$ ;  $3x$  [2]

$$-3y = 16$$

10. On comparing the ratios  $\frac{a_1}{a_2}$ ,  $\frac{b_1}{b_2}$  and  $\frac{c_1}{c_2}$ , find out whether the pair of linear equation is consistent, or inconsistent: [2]  
 $5x - 3y = 11$ ;  $-10x + 6y = -22$
11. Find the value of  $k$  for which the system of equations  $x + 2y = 5$  and  $3x + ky + 15 = 0$  has no solution. [2]
12. Is the pair of linear equations consistent? Justify your answer. [2]  
 $2ax + by = a$ ,  $4ax + 2by - 2a = 0$ ;  $a, b \neq 0$
13. On comparing the ratios  $\frac{a_1}{a_2}$ ,  $\frac{b_1}{b_2}$  and  $\frac{c_1}{c_2}$ , find out whether the pair of linear equations are consistent, or inconsistent:  $\frac{4}{3}x + 2y = 8$ ;  $2x + 3y = 12$ . [2]
14. Find out whether the following pair of linear equations are consistent or inconsistent:  $5x - 3y = 11$ ,  $-10x + 6y = -22$  [2]
15. Is the system of linear equations  $2x + 3y - 9 = 0$  and  $4x + 6y - 18 = 0$  is consistent? Justify your answer [2]
16. On comparing the ratios  $\frac{a_1}{a_2}$ ,  $\frac{b_1}{b_2}$  and  $\frac{c_1}{c_2}$ , find out whether the lines representing the pair of linear equations intersect at a point, are parallel or coincident:  $9x + 3y + 12 = 0$ ;  $18x + 6y + 24 = 0$  [2]
17. On comparing the ratios  $\frac{a_1}{a_2}$ ,  $\frac{b_1}{b_2}$  and  $\frac{c_1}{c_2}$ , find out whether the lines representing the pair of linear equations intersect at a point, are parallel or coincide:  $6x - 3y + 10 = 0$ ;  $2x - y + 9 = 0$ . [2]
18. Is the pair of linear equations consistent? Justify your answer. [2]  
 $-3x - 4y = 12$ ,  $4y + 3x = 12$
19. What type of lines are represented by the equations  $x = 2y$  and  $4x + 3y = 20$ ? [2]
20. Find the condition for which the system of equations  $\frac{x}{a} + \frac{y}{b} = c$  and  $bx + ay = 4ab$  ( $a, b \neq 0$ ) is inconsistent. [2]
21. Draw the graph of the equation  $3x + 2y = 12$ . Also, find the co-ordinates of the points where the line meets the x-axis and the y-axis. [2]
22. Does the pair of the linear equation have no solution? Justify your answer. [2]  
 $x = 2y$ ,  $y = 2x$
23. On comparing the ratios  $\frac{a_1}{a_2}$ ,  $\frac{b_1}{b_2}$  and  $\frac{c_1}{c_2}$ , find out whether the lines representing the pair of linear equations intersect at a point, are parallel or coincident:  $5x - 4y - 8 = 0$ ;  $7x + 6y - 9 = 0$ . [2]
24. 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. [2]
25. Is the pair of linear equation consistent/inconsistent? If consistent, obtain the solution graphically:  $2x - 2y - 2 = 0$ ;  $4x - 4y - 5 = 0$  [2]
26. Draw the graph of the equations  $x - y + 1 = 0$  and  $3x + 2y - 12 = 0$ . Using this graph, find the values of  $x$  and  $y$  which satisfy both the equations. [2]
27. Find whether the lines represented by  $2x + y = 3$  and  $4x + 2y = 6$  are parallel, coincident or intersecting [2]
28. Do the equation  $\frac{x}{2} + y + \frac{2}{5} = 0$  and  $4x + 8y + \frac{5}{16} = 0$  represent a pair of coincident lines? Justify your answer. [2]
29. Find whether the lines representing the following pair of linear equations intersect at a point, are parallel or coincident: [2]  
 $\frac{3}{2}x + \frac{5}{3}y = 7$ ;  $\frac{3}{2}x + \frac{2}{3}y = 6$
30. Does the pair of the linear equation have no solution? Justify your answer. [2]  
 $2x + 4y = 3$ ,  $12y + 6x = 6$
31. Using graphical method, find whether following system of linear equations is consistent or not: [2]  
 $x = 0$  and  $y = -7$
32. Solve the pair of equations  $x = 5$  and  $y = 7$  graphically. [2]

33. Is the pair of linear equation consistent? Justify your answer. [2]  
 $\frac{3}{5}x - y = \frac{1}{2}, \frac{1}{5}x - 3y = \frac{1}{6}$
34. Solve the pair of equations  $x = 3$  and  $y = -4$  graphically. [2]
35. Do the equations  $4x + 3y - 1 = 5$  and  $12x + 9y = 15$  represent a pair of coincident lines? Justify your answer. [2]
36. Solve the equations  $x + 2y = 6$  and  $2x - 5y = 12$  graphically. [2]
37. Ten students of class X took part in Mathematics quiz. If the number of girls is 4 more than the number of boys. [2]  
 Represent this situation algebraically and graphically.
38. Do the equations  $-2x - 3y = 1$  and  $6y + 4x = -2$  represent a pair of coincident lines? Justify your answer. [2]
39. Solve graphically:  $2x - 3y + 13 = 0$ ;  $3x - 2y + 12 = 0$ . [2]
40. Do the equations  $3x + \frac{1}{7}y = 3$  and  $7x + 3y = 7$  represent a pair of coincident lines? Justify your answer. [2]
41. Find whether the following pair of linear equation is consistent or inconsistent: [2]  
 $3x + 2y = 8$   
 $6x - 4y = 9$
42. On comparing the ratios  $\frac{a_1}{a_2}, \frac{b_1}{b_2}$  and  $\frac{c_1}{c_2}$ , find out whether the pair of linear equations are consistent, or [2]  
 inconsistent:  $3x + 2y = 5, 2x - 3y = 7$ .
43. Draw the graphs of the lines  $x = -2$  and  $y = 3$ . Write the vertices of the figure formed by these lines, the x-axis [2]  
 and the y-axis. Also, find the area of the figure.
44. Is the system of linear equations  $4x + 6y = 18$  and  $2x + 3y = 9$  consistent? Justify your answer. [2]
45. Is the pair of equations  $x + 2y - 3 = 0$  and  $6y + 3x - 9 = 0$  consistent? Justify your answer. [2]
46. On comparing the ratios  $\frac{a_1}{a_2}, \frac{b_1}{b_2}$  and  $\frac{c_1}{c_2}$ , find out whether the pair of linear equations are consistent, or [2]  
 inconsistent:  $2x - 3y = 8, 4x - 6y = 9$ .
47. Using graphical method, find whether pair of equations  $x = 0$  and  $y = -3$ , is consistent or not. [2]