MATHS

BOOKS - RD SHARMA MATHS (HINGLISH)

LINEAR EQUATIONS IN TWO VARIABLES

Others

1. Draw a graph of the equation: $y = -3, 2y + 3 = 9$

2. Draw the graphs of $y = x$ and $y = -x$ in the same graph. Also, find the coordinates of the point where the two lines intersect.

3. Draw the graphs of each of the following linear equations:

$$x - 2 = 0, x + 5 = 0, 2x + 4 = 3x + 1$$

▶ Watch Video Solution

4. Draw the graphs of the lines represented by equations $x + y = 4$ and $2x - y = 2$ in the same graph. Also, find the coordinates of the point where the two lines intersect.

▶ Watch Video Solution

5. Draw a graph of the equation: $3x - 2y = 4$

and $x + y - 3 = 0$

6. Express y in terms of x in the equation

$2x - 3y = 12$. Find the points whether the

point $(3, 3)$ is on the line represented by the

equation $3x + y - 12 = 0$

7. Write Each of the following equations in the form $ax + by + c = 0$ and indicate the values of a, b and c in each case:

(i) $3x + 2y = 2.5$

(ii) $7x - 5 = 2y$

8. Write Each of the following equations in the form $ax + by + c = 0$ and indicate the values of $a, \ b \ and \ c$ in each case:

(i) $x = 2y$

(ii) $\dfrac{x}{2} - \dfrac{y}{3} = 5$

(iii) $2y - 3 = \sqrt{2}x$

9. Write each of the following as an equation

in two variables x and y

(i) $x = -3$

(ii) $y = 4$

10. Write each of the following as an equation in two variables $x \; and \; y$

(i) $3x = 2$

(ii) $7y = 3$

11. The cost of a notebook is twice the cost of a pen. Write a linear equation in two variables to represent this statement. (Take the cost of a notebook to be x and that of a pen to be? y).

12. Express the following linear equations in the form $ax + by + c = 0$ and indicate the values of $a,\ b\ and\ c$ in each case:

$-2x + 3y = 12$

(ii) $x - \dfrac{y}{2} - 5 = 0$

▶ Watch Video Solution

13. Express the following linear equations in the form $ax + by + c = 0$ and indicate the

values of a, b and c in each case:

$$2x + 3y = 9.35$$

(ii) $3x = -7y$

14. Express the following linear equations in the form $ax + by + c = 0$ and indicate the values of a, b and c in each case:

(i) $y - 5 = 0$

(ii) $4 = 3x$

(iii) $y = \dfrac{x}{2}$

15. Write each of the following an equation in two variables: $(i)2x = 3$ (ii) $y = 3$

16. Write each of the following an equation in two variables:

(i) $5x = \dfrac{7}{2}$

(ii) $y = \dfrac{3}{2}x$

17. The cost of ball pen is Rs.5 less than half of the coast of fountain pen. Write this statement as a linear equation in two variables.

18. Check which of the following are solutions of the equations $x - 2y = 4$and which are

not:

(i) $(0, 2)$

(ii) $(2, 0)$

(iii) $(4, 0)$

(iv) $(\sqrt{2}, 4\sqrt{2})$

(v) $(1, \ 1)$

> ▶ **Watch Video Solution**

---

19. Write four solution of the equation

$\pi x + y = 9$

> ▶ **Watch Video Solution**

20. Find the value of k, if $x = 2, y = 1$ is a solution of the equations $2x + 3y = k$.

21. If $x = 1$, y=2 is a solution of the equation $a^2x + ay = 3$, then find the values of a

22. If $x = 2k - 1$ and $y = k$ is a solution the equation $3x - 5y - 7 = 0$; find the value of k.

> ▶ Watch Video Solution

23. If $x = k^2$ and $y = k$ is a solution of the equation $x - 5y + 6 = 0$ then find the values of k

> ▶ Watch Video Solution

24. Write two solutions for each of the following equations:

(i) $3x + 4y = 7$

(ii) $x = 6y$

▶ Watch Video Solution

25. Write two solutions for each of the following equations:

(i) $x + \pi y = 4$

(ii) $\dfrac{2}{3}x - y = 4$

▶ Watch Video Solution

26. If $x = -1, y = 2$ is a solution of the equation $3x + 4y = k$, find the value of k

27. Find the value of λ, if $x = -\lambda \ and \ y = \dfrac{5}{2}$ is a solution of the equation $x + 4y - 7 = 0$

28. If $x = 2\alpha + 1$ and $y = \alpha - 1$ is a solution of the equation $2x - 3y + 5 = 0$, find the value of α

▶ Watch Video Solution

29. If $x = 1$ and $y = 6$ is a solution of the equation $8x - ay + a^2 = 0$, find the value of a

▶ Watch Video Solution

30. Draw the graph of the equation $y - x = 2$

31. Draw the graph of the equation

$2x + y = 3$

32. Draw a graph of the line $x - 2y = 3$. From the graph, find the coordinates of the point when $x = -5$ (ii) $y = 0$

33. Draw the graphs of $y = x$ and $y = -x$ in the same graph. Also, find the coordinates of the point where the two lines intersect.

34. Draw graphs of the equation : $3x - 2y = 4$ and $x + y - 3 = 0$ in the same

graph and find the coordinates of the point where two lines intersect.

35. The taxi fare in a city is as follows: For the first kilometre, the fare is Rs 8 and for the subsequent distance it is Rs 5 per km. Taking the distance covered as x km and total fare as Rs y, write a linear equation for this information, and draw its graph

36. Yamini and Fatima, two students of Class IX of a school, together contributed ₹ 100 towards the Prime Minister's Relief Fund to help the earthquake victims. Write a linear equation which satisfies this data. (You may take their contributions as ₹ x and ₹ y.) Draw the graph of the same.

37. If the work done by a body on application of a constant force is directly proportional to the distance travelled by the body, express this in the form of an equation in two variables and draw the graph of the same by taking the constant force as

▶ **Watch Video Solution**

38. In countries like USA and Canada, temperature is measured in Fahrenheit,

whereas in countries like India, it is measured in Celsius. Here is a linear equation that converts Fahrenheit to Celsius:

$F = (9/5)C + 32$

(i) Draw the graph of the linear equation above using Celsius for x-axis and Fahrenheit for y-axis.

(ii) If the temperature is 30° C, what is the temperature in Fahrenheit?

(iii) If the temperature is 95° F, what is the temperature in Celsius?

(iv) If the temperature is 0° C, what is the temperature in Fahrenheit and if the

temperature is 0° F, what is the temperature in Celsius?

(v) Is there a temperature which is numerically the same in both Fahrenheit and Celsius? If yes, find it.

39. If the points $A(3, 5) and B(1, 4)$ lie on the graph of the line $ax + by = 7,$ find the values of $a \; and \; b$

40. Draw the graph of line $4x + 3y = 24$ Write the coordinates of points where this line intersects the x-axis and y-axis. Use this graph to find the area of the triangle formed by the line and the coordinates axes.

41. Draw the graphs of $2x + y = 6$ and $2x - y + 2 = 0$. Shade the region bounded

by these lines and x-axis. Find the area of the shaded region.

42. Draw the graphs of the equations $x - y = 1 \, and \, 2x + y = 8$. Shade the area bounded by these two lines and y-axis. Also, determine this area.

43. Draw the graph of each of the following linear equations in two variables:(i) $x + y = 4$ (ii) $x - y = 2$ (iii) $y = 3x$ (iv) $3 = 2x + y$

> ▶ Watch Video Solution

44. Draw the graph of each of the following linear equations in two variables: $-x + y = 6$

> ▶ Watch Video Solution

45. Draw the graph of each of the following linear equations in two variables: $3x + 5y = 15$ (ii) $\dfrac{x}{2} - \dfrac{y}{3} = 2$

▶ **Watch Video Solution**

46. Draw the graph of each of the following linear equations in two variables: $y = 2x$

▶ **Watch Video Solution**

47. Give the equations of two lines passing through $(3, 12)$. How many more such lines are there, and why?

 Watch Video Solution

48. A three-wheeler scooter charges 15 for first kilometer and 8 each for every subsequent kilometer. For a distance of x km, an amount of y is paid. Write the equation representing the above information

49. A lending library has a fixed charge for the first three days and an additional chargefor each day thereafter. Aarushi paid Rs 27 for a book kept for seven days. If fixed charges are Rs x and per day charges are Rs y. Write the linear equation representing the abvoe information.

50. A number is 27 more than the number obtained by reversing its digits. If its unit's and tens digit are x and y respectively, write the linear equation representing the above statement.

51. The sum of a two digit number and the number obtained by reversing the order of its digits is 121. If units and ten's digit of the

number are x and y respectively, then write the linear equation representing the above statement.

52. Plot the points $(3, 5)$ and $(-1, 3)$ on a graph paper and verify that the straight line passing through these points also passes through the point $(1, 4)$
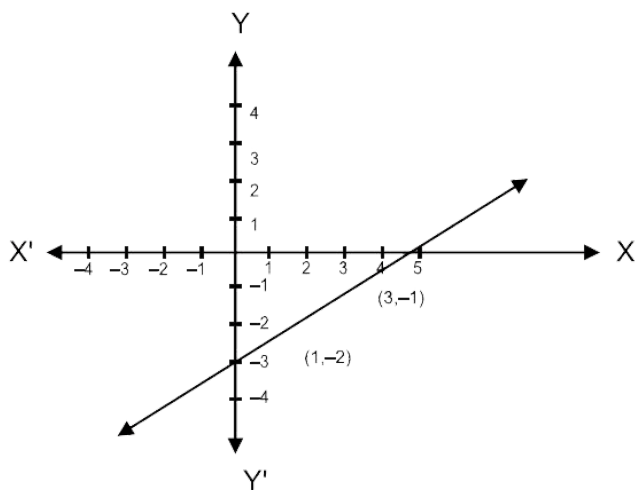
53. From the choices given below choose the equation whose graph is given in

(i) $x+2y=5$

(ii) $x-2y=5$

(iii) $y+2x=5$

54. If the point $(2, -2)$ lies on the graph of the linear equation $5x + ky = 4$, find the value of k

55. Draw the graph of the equation $2x + 3y = 12$. From the graph, find the coordinates of the point: whose y - coordinates is 3. Whose x coordinate is - 3

56. Draw the graph of the equation $2x + y = 6$. Shade the region bounded by the graph and the coordinate axes. Also, find the area of the shaded reg

57. Draw the graph of the equation $\frac{x}{3} + \frac{y}{4} = 1$. Also, find the area of the triangle formed by the line and the coordinates axes.

58. Draw the graph of $y = |x|$

▶ **Watch Video Solution**

59. Draw the graph of $y = |x| + 2$

▶ **Watch Video Solution**

60. Ravish tell his daughter aarushi ,seven years ago,i was as old as seven times you were

then .Also three years from now i shall be three times as old as you will be. If present ages of aarushi and ravish are x and y years respectively .represent this situation algebraically and graphically.

61. Aarushi was driving a car with uniform speed of 60 km/h. Draw distance-time graph. $2\frac{1}{2}Hours$ (ii) $\frac{1}{2} Hours$

62. Solve the equation $2x + 1 = x - 3$ and represent the solution(s)on (i) the number line(ii) the Cartesian plane.

63. Draw the graphs of each of the following linear equation in Cartesian plane: $2x + 4 = 3x + 1$

64. Given the geometrical representation of $2x + 13 = 0$ as an equation in One variable (ii) two variable $2x + 13 = 0$ we get $x = -\dfrac{13}{2}$ the geometrical representation of $2x + 13 = 0$ as an equation in One variable (ii) two variable is

65. Solve the equation $3x + 2 = x - 8$, and represent the solution on (i) the number line

(ii) the Cartesian plane.

66. Write the equation of the line that is parallel to x-axis and passing through the point (i) $(0, \ 3)$ (ii) $(0, \ -4)$

67. Write the equation of the line that is parallel to x-axis and passing through the

point $(2, \ -5)$ (ii) $(3, \ 4)$

68. Write the equation of the line that is parallel to y-axis and passing through the point

(i) $(4, 0)$

(ii) $(-2, 0)$

69. Write the equation of the line that is parallel to y-axis and passing through the point $(3, \ 5)$ (ii) $(-4, \ -3)$

70. Write the equation representing x-axis.

71. Write the equation which represents y axis.

`

72. Write the equation of a line passing through the point (0, 4) and parallel to x-axis.

73. Write the equation of a line passing through the point (3, 5) and parallel to x-axis.

74. Write the equation of a line parallel to y-axis and passing through the point $(- 3, \ - 7)$.

75. A line passes through the point $(-4, 6)$ and is parallel to x-axis. Find its equation.

76. Solve the equation $3x - 2 = 2x + 3$ and represent the solution on the number line.

77. Solve the equation $2y - 1 = y + 1$ and represent it graphically on the coordinate plane.

78. If the point $(a, \; 2)$ lines on the graph of the linear equation $2x - 3y + 3 = 0$, find the value of a

79. Find the value of k for which the point $(1, \ -2)$ lies on the graph of the linear equation $x - 2y + k = 0$

80. If $(4, 19)$ is a solution of the equation $y = ax + 3$, then $a =$

(a) 3

(b) 4

(c) 5

(d) 6

81. If $(a, 4)$ lies on the graph of equation $3x + y = 10$, then the value of a is

(a) 2

(b) 1

(c) 3

(d) 4

82. The graph of the linear equation

$2x - y = 4$ cuts x-axis at

(a) $(2, 0)$

(b) $(- 2, 0)$

(c) $(0, - 4)$

(d) $(0, 4)$

83. How many linear equations are satisfied by

$x = 2$ and $y = - 3$?

(a) only one

(b) Two

(c) three

(d) infinitely many

84. The equation $x - 2 = 0$ on number line is represented by

(a) a line

(b) a point

(c) infinitely many lines

(d) two lines

85. $x = 2, \ y = -1$ is a solution of the linear

equation

(a) x+2y=0

(b) x+2y=4

(c) 2x+y=0

(d) 2x+y=5

86. If $(2k - 1, k)$ is a solution of the equation

$10x - 9y = 12$, then $k =$

(a) 1

(b) 2

(c) 3

(d) 4

87. The distance between the graph of the

equations $x = -3$ and $x = 2$ is

(a) 1

(b) 2

(c) 3

(d) 5

88. The distance between the graphs of the equations $y = -1$ and $y = 3$ is:

(a) 2

(b) 4

(c) 3

(d) 1

89. If the graph of the equation $4x + 3y = 12$

cuts the coordinate axes at A and B , then

hypotenuse of right triangle AOB length is ?

(a) 4 units

(b) 3 units

(c) 5 units

(d) none of these