MATHS

BOOKS - RD SHARMA MATHS (ENGLISH)

LINEAR EQUATIONS IN TWO VARIABLES

Others

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

Watch Video Solution

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.

Watch Video Solution

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 $x + y - 3 = 0$

Watch Video Solution

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 $3x + y - 12 = 0$

Watch Video Solution

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) $7x - 5 = 2y$

Watch Video Solution

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) $\frac{x}{2} - \frac{y}{3} = 5$

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

Watch Video Solution

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

(i)$x = \; -3$

(ii) $y = 4$

Watch Video Solution

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

(i)$3x = 2$

.(ii) $7y = 3$

Watch Video Solution

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).

Watch Video Solution

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:

(i) $-2x + 3y = 12$

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

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:

(i)$2x + 3y = 9.35$

(ii) $3x = -7y$

Watch Video Solution

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) $y = \frac{x}{2}$

Watch Video Solution

15. Write each of the following equation in two variables: `

(i) $2x=3$

(ii) $y=3$

Watch Video Solution

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

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

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

Watch Video Solution

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

Watch Video Solution

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. 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

20. Write four solution of the equation $\pi x + y = 9$.

Watch Video Solution

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

Watch Video Solution

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

Watch Video Solution

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

Watch Video Solution

24. 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

25. Find the solution of the form $x = a,\ y = 0$ and $x = 0,\ y = b$ for the following equations:

Watch Video Solution

26. Write two solutions for each of the following equations: (i) $3x + 4y = 7$ (ii)

$x = 6y$

Watch Video Solution

27. Write two solutions for each of the following equations: $x + \pi y = 4$ (ii) $\frac{2}{3}x - y = 4$

Watch Video Solution

28. Write two solutions of the following are solutions of the equation $2x - y = 6$ and

which are not: $(3, 0)$ (ii) $(0, -6)$ (iii) $(2, -2)$

Watch Video Solution

29. Write two solutions of the following are solutions of the equation $2x - y = 6$ and which are not: $(\sqrt{3}, 0)$ (ii) $\left(\frac{1}{2}, -5\right)$

Watch Video Solution

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

Watch Video Solution

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

Watch Video Solution

32. 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

33. 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

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

Watch Video Solution

35. Draw the graph of the equation $2x + y = 3$

Watch Video Solution

36. Draw a graph of the line $x - 2y = 3$. From the graph, find the coordinates of the point

when $x = -5$ (ii) $y = 0$

Watch Video Solution

37. 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.

Watch Video Solution

38. 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.

Watch Video Solution

39. 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 it's graph

Watch Video Solution

40. Yamini and Fatima, two students of Class IX of a school, together contributed Rs 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 Rs.x and Rs.y.) Draw the graph of the same.

Watch Video Solution

41. 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 5 units.

Watch Video Solution

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

whereas incountries like India, it is measured in Celsius. Here is a linear equation that convertsFahrenheit to Celsius: $F = \left(\frac{9}{5}\right)C + 32$(i) Draw the graph of the linear equation.

Watch Video Solution

43. Given the equations of two lines passing through (2, 14). How many more such lines are there, and why?

Watch Video Solution

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

Watch Video Solution

45. 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.

Watch Video Solution

46. 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.

Watch Video Solution

47. 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.

Watch Video Solution

48. 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

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

(ii) $y = 2x$

Watch Video Solution

50. Draw the graph of each of the following linear equations in two variables:

$3x + 5y = 15$ (ii) $\frac{x}{2} - \frac{y}{3} = 2$

Watch Video Solution

51. Draw the graph of each of the following linear equations in two variables: $\frac{x-2}{3} = y - 3$ (ii) $2y = -x + 1$

Watch Video Solution

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

Watch Video Solution

53. 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

Watch Video Solution

54. 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.

Watch Video Solution

55. 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.

Watch Video Solution

56. 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.

Watch Video Solution

57. 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 $(1,\ 4)$.

Watch Video Solution

58. Draw the Graph for the given equation. - (i) $y = x$ (ii) $x + y = 0$

Watch Video Solution

59. Draw the Graph for the given equation. - (i) $y = 2x$

Watch Video Solution

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

Watch Video Solution

61. Draw the graph of the equation $x - y = 0$.

Watch Video Solution

62. Draw the graph of each of the equations given below. Also, find the coordinates of the points where the graph cuts the coordinate axes: $6x - 3y = 12$ (ii) $-x + 4y = 8$

Watch Video Solution

63. Draw the graph of each of the equations given below. Also, find the coordinates of the points where the graph cuts the coordinate axes: $2x + y = 6$ (ii) $3x + 2y + 6 = 0$

Watch Video Solution

64. 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 region.

Watch Video Solution

65. 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.

Watch Video Solution

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

Watch Video Solution

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

Watch Video Solution

68. Draw the graphs of the following linear equations on the same graph paper: $2x + 3y = 12,\ x - y = 1$ Find the coordinates of the vertices of the triangle formed by the two straight lines and the y-axis. Also, find the area of the triangle.

Watch Video Solution

69. Solve graphically the system of linear equations:

$4x - 3y + 4 = 0, \quad 4x + 3y - 20 = 0$ Find the area bounded by these lines and x-axis.

Watch Video Solution

70. The path of a train A is given by the equation $3x + 4y - 12 = 0$ and the path of another train B is given by the equation $6x + 8y - 48 = 0$. Represent this situation graphically.

Watch Video Solution

71. 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.

Watch Video Solution

72. Aarushi was driving a car with uniform speed of 60 km/h. Draw distance-time graph.

From the graph, find the distance travelled by Aarushi in (i) $2\frac{1}{2}Hours$ (ii) $\frac{1}{2}\ Hours$

Watch Video Solution

73. Solve the equation $2x + 1 = x - 3$and represent the solution(s)on

(i) the number line

(ii) the Cartesian plane.

Watch Video Solution

74. Draw the graphs of each of the following linear equation in Cartesian plane : $x - 2 = 0$

Watch Video Solution

75. Draw the graphs of each of the following linear equation in Cartesian plane: $x + 5 = 0$

Watch Video Solution

76. Draw the graphs of each of the following linear equation in Cartesian plane: $y = 1$

Watch Video Solution

77. Draw a graph of the equation: $y = -3$

Watch Video Solution

78. Draw a graph of the equation: $x = -2y$

Watch Video Solution

79. Given the geometric representations of the equation: one the number line (i) on the Cartesian plane $x = 2$ (ii) $y + 3 = 0$ (iii) $y = 3$ (iv) $2x + 9 = 0$ (v) $3x - 5 = 0$

Watch Video Solution

80. Given the geometrical representation of $2x + 13 = 0$ as an equation in One variable (ii) two variables

Watch Video Solution

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

Watch Video Solution

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

(i) $(0,\ 3)$

(ii) $(0,\ -4)$

Watch Video Solution

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

(i) $(2,\ -5)$

(ii) $(3,\ 4)$

Watch Video Solution

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

(i) $(4, 0)$

(ii) $(-2, 0)$

Watch Video Solution

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

(i) $(3,\ 5)$

(ii) $(-4,\ -3)$

Watch Video Solution

86. Write the equation representing x-axis.

Watch Video Solution

87. Write the equation which represents y axis.

A. $y = 0$

B. $x = 0$

C. $x = 1$

D. $x + y = 0$

Answer: B

Watch Video Solution

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

Watch Video Solution

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

Watch Video Solution

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

Watch Video Solution

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

A. $x = -4$

B. $y = 6$

C. $x = 6$

D. $y = -4$

Answer: B

Watch Video Solution

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

Watch Video Solution

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

Watch Video Solution

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

Watch Video Solution

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

Watch Video Solution

96. If (4, 19) is a solution of the equation $y = ax + 3$, then $a =$ (a) 3 (b) 4 (c) 5 (d) 6

Watch Video Solution

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

A. 1

B. 2

C. 3

D. 4

Answer: B

Watch Video Solution

98. The graph of the linear equation $2x - y = 4$ cuts x-axis at

A. $(2, 0)$

B. $(-2, 0)$

C. $(0, -4)$

D. $(0, 4)$

Answer: A

Watch Video Solution

99. How many linear equations are satisfied by $x = 2 \, and \, y = -3$? (a) only one (b) Two (c) three (d) infinitely many

Watch Video Solution

100. The equation $x - 2 = 0$ on number line is represented by (a) a line (b) a point (c) infinitely many lines (d) two lines

Watch Video Solution

101. 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

Watch Video Solution

102. If $(2k-1,\ k)$ is a solution of the equation $10x-9y=12,$ then $k=\ ?$

A. 1

B. 2

C. 3

D. 4

Answer: B

Watch Video Solution

103. The distance between the graph of the equations $x = -3 \, and \, x = 2$ is

A. 1

B. 2

C. 3

D. 5

Answer: D

Watch Video Solution

104. The distance between the graphs of the equations $y = -1 \, and \, y = 3$ is: (a) 2 (b) 4 (c) 3 (d) 1

Watch Video Solution

105. 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

Watch Video Solution