MATHS

BOOKS - KUMAR PRAKASHAN KENDRA

MATHS (GUJRATI ENGLISH)

LINEAR EQUATIONS IN TWO VARIABLES

Sum To Enrich Remember

1. 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 :

$2x + 3y = 4.37$

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2. 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 :

$x - 4 = \sqrt{3}y$

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3. 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 :

$4 = 5x - 3y$

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4. 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 :

$2x = y$

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

x = - 5

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

$y = 2$

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

$2x = 3$

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

5y = 2

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9. Find four different solutions of the equation

$x + 2y = 6$

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10. Find two solutions for each of the following equations :

$4x + 3y = 12$

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11. Find two solutions for each of the following equations :

$2x + 5y = 0$

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12. Find two solutions for each of the following equations :

$3y + 4 = 0$

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13. You know that the force applied on a body is directly proportional to the acceleration produced in the body . Write an equation to express this situation and plot the graph of the equation.

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

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Skill Testing Exercise

1. Express each of the following linear equations in two variables in the standard

form $ax + by + c = 0$ and in each case state the values of a, b and c :

$4x = 5y + 2$

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2. Express each of the following linear equations in two variables in the standard form $ax + by + c = 0$ and in each case state the values of a, b and c :

$5x - 3y = 2.\bar{8}$

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3. Express each of the following linear equations in two variables in the standard form $ax + by + c = 0$ and in each case state the values of a, b and c :

$$\frac{1}{6}x = \frac{1}{4}y + 3$$

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4. Express each of the following linear equations in two variables in the standard form $ax + by + c = 0$ and in each case state

the values of a, b and c :

$y = 4x - 1$

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5. Express each of the following linear equations in two variables in the standard form $ax + by + c = 0$ and in each case state the values of a, b and c :

$3x = 7 - 2y$

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6. Express each of the following linear equations in two variables in the standard form $ax + by + c = 0$ and in each case state the values of a, b and c :

$-3x + 4y = 12$

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7. Express each of the following linear equations in two variables in the standard form $ax + by + c = 0$ and in each case state

the values of a, b and c :

$5y = 3x$

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8. Express each of the following linear equations in two variables in the standard form $ax + by + c = 0$ and in each case state the values of a, b and c :

$2x - 3y = 0$

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9. Express each of the following linear equations in two variables in the standard form $ax + by + c = 0$ and in each case state the values of a, b and c :

$4x - 8 = 0$

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10. Express each of the following linear equations in two variables in the standard form $ax + by + c = 0$ and in each case state

the values of a, b and c :

$3y = 15$

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11. Find for solutions of each of the following equation :

$x + y = 7$

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12. Find for solutions of each of the following equation :

$2x - y = 12$

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13. Find for solutions of each of the following equation :

$y = 3x$

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14. Find for solutions of each of the following equation :

$x - y = 5$

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15. For each of the points given below , check whether it is a solution of equation $2x + 3y = 24$ or not :

(12,0)

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16. For each of the points given below , check whether it is a solution of equation $2x + 3y = 24$ or not :

$(-\sqrt{3}, 2\sqrt{3})$

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17. For each of the points given below , check whether it is a solution of equation $2x + 3y = 24$ or not :

$(6, 4)$

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18. For each of the points given below , check whether it is a solution of equation $2x + 3y = 24$ or not :

$(24, -8)$

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19. For each of the points given below , check whether it is a solution of equation

$2x + 3y = 24$ or not :

$(3, 2)$

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20. For each of the points given below , check whether it is a solution of equation $2x + 3y = 24$ or not :

$(30, -12)$

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21. If x = 2 and y = 5 is one of the solutions of equations $5x + 2y = k$, find the value of k.

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22. If x = 5 and y = 4 is one of the solutions of equation 4x - ky = 10 . Find the value of k.

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23. Give equations of any four lines passing through point (5,7)

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24. Ariv received certain amount form his dad and another amount from his mom . The sum of twice the amount received from his dad and thrice the amount received from his mom is Rs 1200 Form the equation representing this information and draw its graph .

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25. Draw the graph of the equation $3x + 2y = 12$ and state the coordinates of its point of intersection with the x - axis and the y - axis.


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26. Draw the coordinates of its point of intersection with the x - axis and the y - axis.


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27. The cost of book is Rs 10 more than three time the cost of a pen From the equation representing this information and draw its graph.

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28. Give the geometric representation of the equation $3x - 12 = 0$ as equation (1) in one variable (2) in two variables .

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29. Give the geometric representation of the equation $2y + 10 = 0$ as an equation (1) in one variable (2) in two variables.

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Exercise 4 1

1. The cost of 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 Rs x and that of a pen to be Rs y)

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

$2x + 3y = 9.3\bar{5}$

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

$$x - \frac{y}{5} - 10 = 0$$

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4. Express the following linear equations in the form ax + by + c = 0 and indicate the values of a , b and c and indicate the values of

a, b and c in each case :

$-2x + 3y = 6$

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

$x = 3y$

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

$2x = -5y$

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7. Express the following linear equations in the form ax + by + c = 0 and indicate the values of a , b and c and indicate the values of a, b and c

in each case :

$3x + 2 = 0$

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

$y - 2 = 0$

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

$5 = 2x$

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Exercise 4 2

1. Which one of the following options is true and why ?

$y = 3x + 5$ has (i) a unique solution , (ii) only two solution , (iii) infinitely many solutions.

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2. Write four solutions for each of the following equations :

$2x + y = 7$

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3. Write four solutions for each of the following equations :

$\pi x + y = 9$

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4. Write four solutions for each of the following equations :

$x = 4y$

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5. Check which of the following are solution of the equation $x - 2y = 4$ and which are not :

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

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

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Exercise 4 3

1. If the point (3,4) lies on the graph of the equation $3y = ax + 7$. find the value of a .

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2. The taxi fare in a city is as follows : Four the first kilometre , the fare is Rs 8 and for the subsequent distance it is Rs 5 per km. Taking the distance covered a x km and total fare Rs y write a linear equation and total fare Rs . Write a linear equation .

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3. 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. Also read from thte graph the work done when the distance travelled by the body is (1) 2 units (ii) 0 unit .

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4. 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 this data. (You may take their contributions as Rs x and Rs y). Draw the graph of the same.

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5. 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 :

$$F = \left(\frac{9}{5}\right)C + 32$$

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

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6. In countries like USA and Canada temperature is measured in Fahrenheit where

as in countries like India, it is measured in Celsius. Here is a linear equation that converts Fahrenheit to Celsius F = $\left(\frac{9}{5}\right)C + 32$

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

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7. In countries like USA and Canada temperature is measured in Fahrenheit where as in countries like India, it is measured in Celsius. Here is a linear equation that converts

Fahrenheit to Celsius F = $(\frac{9}{5})$C + 32

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

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8. 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 :

$$F = \left(\frac{9}{5}\right)C + 32$$

If the temperature is $0^{\circ}C$, what is the temperature in Fahrenheit and if the temperature is $0^{\circ}F$, what is the temperature in Celsius ?

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9. 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 :

$$F = \left(\frac{9}{5}\right)C + 32$$

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

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Exercise 4 4

1. Give the geometric representation of y = 3 as an equation (i) in one variable (ii) in two variables .

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2. Give the geometric representations of $2x + 9 = 0$ as an equation (i) in one variable (ii) in two variables.

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Multiple Choice Questions Mcqs

1. If (2,-2) is root of $5x - 2y = k$, then k = ...

A. -40

B. 6

C. 14

D. 10

Answer: A::D

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2. If $x = 2$ and y = 1 is one of the solutions of

$4x + ky = 11,$ then k = ...

A. 2

B. 3

C. 5

D. 6

Answer: C

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3. If (3,-2) is one of the solutions of $kx - 3y = 21$, then k = ...

A. 3

B. -3

C. 2

D. 5

Answer:

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4. The graph of 2x - 3y = 6 passes through points .....

A. (2,-3) and (-2,3)

B. (2,3) and (3,2)

C. (0,2) and (-3,2)

D. (0,-2) and (3,0)

Answer: A::B::C::D

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5. Expressing $4x = 2y - 7$ in the y - form , we get y = ...

A. $4x + 7$

B. $4x + \frac{7}{2}$

C. $2x + \frac{7}{2}$

D. $2x - \frac{7}{2}$

Answer: B

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6. If $F = \left(\frac{9}{5}\right)C + 32$, then c = ...

A. 5F - 160

B. $\frac{1}{9}(5F - 32)$

C. $\frac{5}{9}F - 32$

D. $\frac{5}{9}(F - 32)$

Answer: B::C

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7. If $F = \left(\frac{9}{5}\right)C + 32$, then c = ...

A. C = 5

B. C = - 40

C. C = 40

D. C = 32

Answer: C::D

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