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EXERCISE 4.1 - Question No. 1

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

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EXERCISE 4.1 - Question No. 2

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) $2x + 3y = 9.3\bar{5}$ (ii) $x - \frac{y}{5} - 10 = 0$ (iii) $-2x + 3y = 6$ (iv)

$x = 3y$ (v) $2x = -5y$ (vi) $3x + 2 = 0$ (vii) $y - 2 = 0$

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EXERCISE 4.2 - Question No. 1

Winch one of the following options is true, and why? $y = 3x + 5$

has (i) a unique solution, (ii) only two solutions, (iii) infinitely

many solutions

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EXERCISE 4.2 - Question No. 2

Write four solutions for each of the following equations: (i)

$$2x + y = 7 \text{ (ii) } \pi x + y = 9 \text{ (iii) } x = 4y$$

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EXERCISE 4.2 - Question No. 3

Check which of the following are solutions of the equations

$$x - 2y = 4 \text{ and which are not: (i) } (0, 2) \text{ (ii) } (2, 0) \text{ (iii) } (4, 0) \text{ (iv)}$$

$$(\sqrt{2}, 4\sqrt{2}) \text{ (v) } (1, 1)$$

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EXERCISE 4.2 - Question No. 4

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

$$2x + 3y = k .$$

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EXERCISE 4.3 - Question No. 1

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)

$$3 = 2x + y$$

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EXERCISE 4.3 - Question No. 2

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

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EXERCISE 4.3 - Question No. 3

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

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EXERCISE 4.3 - Question No. 4

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.

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EXERCISE 4.3 - Question No. 5

From the choices given below, choose the equation whose graphs are given in Fig. 4.6 and Fig. 4.7. For Fig.4.6 (i) $y = x$ (ii) $x + y = 0$ (iii) $y = 2x$ (iv) $2 + 3y = 7x$ For Fig.4.7. (i) $y = x + 2$ (ii) $y = x - 2$ (iii) $y = -x + 2$ (iv) $x + 2$

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EXERCISE 4.3 - Question No. 6

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 the graph the work done when the distance travelled by the body is (i) 2 units (ii) 0 unit

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EXERCISE 4.3 - Question No. 7

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.

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EXERCISE 4.3 - Question No. 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: $F = \left(\frac{9}{5}\right)C + 32$ (i) Draw the graph of the linear eq

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EXERCISE 4.4 - Question No. 1

Give the geometric representations of $y = 3$ as an equation (i) in one variable (ii) in two variables

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EXERCISE 4.4 - Question No. 2

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

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SOLVED EXAMPLES - Question No. 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: (i)

$2x + 3y = 4.37$ (ii) $x - 4 = \sqrt{3}y$ (iii) $4 = 5x - 3y$ (iv) $2x = y$

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SOLVED EXAMPLES - Question No. 2

Write each of the following as an equation in two variables: (i)

$x = -5$ (ii) $y = 2$ (iii) $2x = 3$ (iv) $5y = 2$

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SOLVED EXAMPLES - Question No. 3

Find four different solutions of the equation $x + 2y = 6$.

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SOLVED EXAMPLES - Question No. 4

Find two solutions for each of the following equations: (i)

$$4x + 3y = 12 \text{ (ii) } 2x + 5y = 0 \text{ (iii) } 3y + 4 = 0$$

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SOLVED EXAMPLES - Question No. 5

Given the point $(1, 2)$, find the equation of a line on which it lies.

How many such equations are there?

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SOLVED EXAMPLES - Question No. 6

Draw the graph of $x + y = 7$.

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SOLVED EXAMPLES - Question No. 7

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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SOLVED EXAMPLES - Question No. 8

For each of the graphs given in Fig. 4.5 select the equation whose

graph it is from the choices given below: (a) For Fig 4.5(i) (i)

$x + y = 0$ (ii) $y = 2x$ (iii) $y = x$ (iv) $y = 2x + 1$ (b) For fig

4,5(ii) (i) $x + y = 0$ (i

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SOLVED EXAMPLES - Question No. 9

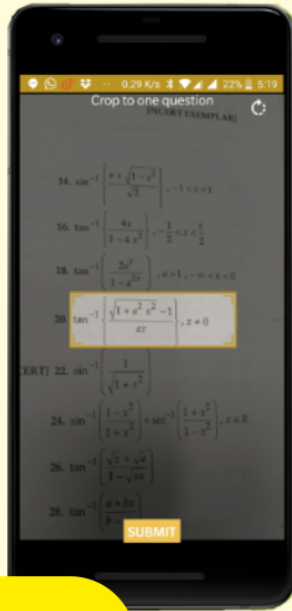
Solve the equation $2x + 1 = x - 3$ and represent the solution(s) on

(i) the number line (ii) the Cartesian plane.

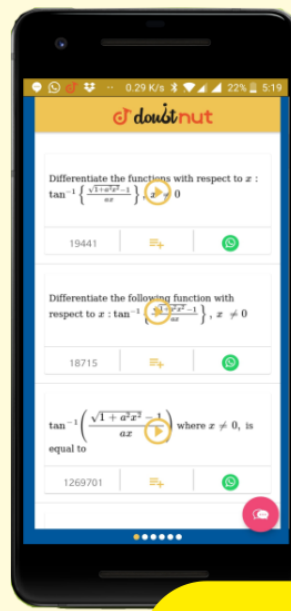
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