

9th Linear Equation in two Variables [Practice Paper-02]

9th Linear Equation in two Variable [2 Marks Questions]

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 .)

Solution: Let the cost of a notebook to be Rs x and that of a pen to be Rs y

Given,

The cost of a notebook is twice the cost of a pen $\Rightarrow x = 2y$

2. Which 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.

Solution: Infinitely many solutions.

Reason. For every value of x , there is a corresponding value of y and vice-versa]

3. Write any four solutions for (i) $2x + y = 7$ or, (ii) $x = 4y$

4. Check (4, 0) is a solution for the equation $x - 2y = 4$

Solution: Put, $x = 4$ and $y = 0$

$$x - 2y = 4 \Rightarrow 4 - (2 \times 0) = 4 \Rightarrow 4 = 4 \Rightarrow \text{LHS} = \text{RHS}$$

Hence, (4, 0) is a solution for the equation $x - 2y = 4$

5. If (2, 0) is a solution of linear equation $2x + 3y = k$, then find the value of k .

Solution: (2, 0) is a solution of linear equation $2x + 3y = k \Rightarrow 2 \times 2 + 3 \times 0 = k \Rightarrow k = 4$

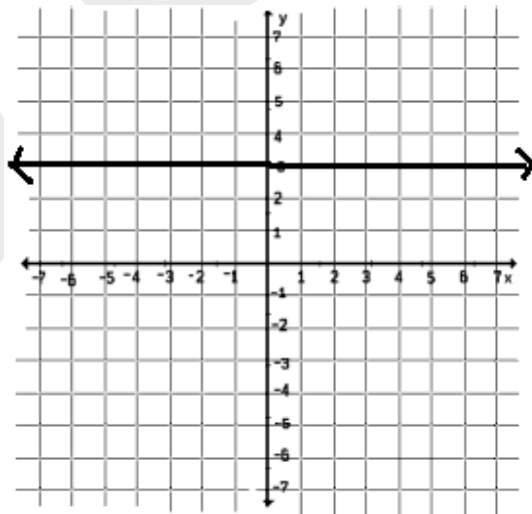
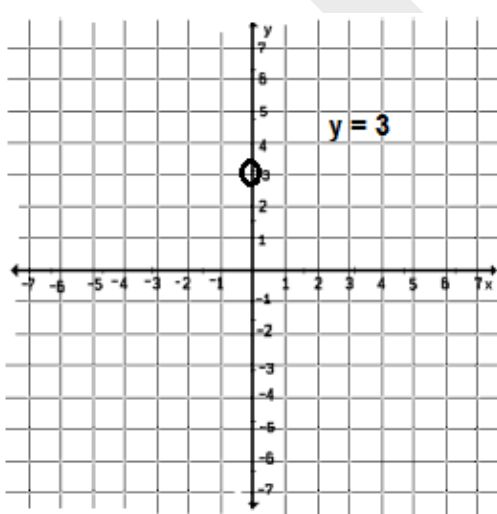
6. If the point (2, -1) lies on the graph of the equation $3x + ky = 4$, then find the value of k .

Solution: (2, -1) is a solution of linear equation $3x + ky = 4 \Rightarrow 3 \times 2 + k(-1) = 4 \Rightarrow 6 - k = 4 \Rightarrow k = 2$

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

Solution: The geometric representations of $y = 3$ as an equation

(i) in one variable



(ii) In two variables

x	1	2	3
y	3	3	3

8. Check whether the graph of the linear equation $x + 2y = 7$ passes through the point $(0, 7)$.

Solution: putting, $x = 0$ and $y = 7 \Rightarrow 0 + 2 \times 7 = 7 \Rightarrow 14 = 7$ Here, $LHS \neq RHS$. So, the graph of the linear equation $x + 2y = 7$ cannot pass through the point $(0, 7)$.

9. Mayank and Sujata two students of class IX together contributed Rs 1000 towards PM Relief fund. Write a linear equation satisfying the data

Solution: Let Mayank and Sujata two students of class IX contributed Rs. X and Rs. Y towards PM Relief fund

$$\Rightarrow X + y = 1000$$

10. The cost of a table exceeds the cost of the chair by Rs 150. Write a linear equation in two variables to represent this statement. Also, find two solutions of the same equation.

Solution: Let, the cost of a chair = x and the cost of a table = y

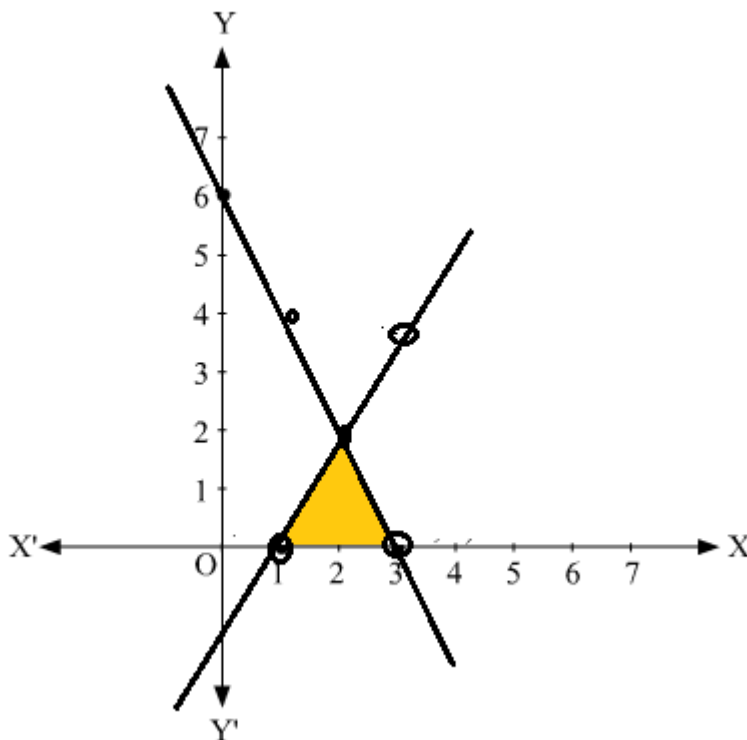
$$\text{The cost of a table exceeds the cost of the chair by Rs 150} \Rightarrow y = x + 150 \Rightarrow x - y = -150$$

Solution of this equation : $(100, 250), (200, 350)$

11. 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.

Solution:

$2x + y = 6 \Rightarrow y = 6 - 2x$				$2x - y + 2 = 0 \Rightarrow 2x - 2 = y$			
x	1	2	3	x	1	2	3
y	4	2	0	y	0	2	4



The area of the shaded region = $\frac{1}{2} \times 3 \text{ unit} \times 2 \text{ unit} = 3 \text{ sq. unit}$