

Solutions for Class 9 Maths Chapter 13 Linear Equations in Two Variables

Exercise 13.1

Question 1: 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) $x - y/2 - 5 = 0$ (iii) $2x + 3y = 9.35$
(iv) $3x = -7y$ (v) $2x + 3 = 0$ (vi) $y - 5 = 0$
(vii) $4 = 3x$ (viii) $y = x/2$

Solution:

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

$$\text{Or } -2x + 3y - 12 = 0$$

Comparing the given equation with $ax + by + c = 0$

We get, $a = -2$; $b = 3$; $c = -12$

(ii) Given equation, $x - y/2 - 5 = 0$

Comparing the given equation with $ax + by + c = 0$,

We get, $a = 1$; $b = -1/2$, $c = -5$

(iii) Given equation, $2x + 3y = 9.35$

$$\text{or } 2x + 3y - 9.35 = 0$$

Comparing the given equation with $ax + by + c = 0$

We get, $a = 2$; $b = 3$; $c = -9.35$

(iv) Given equation, $3x = -7y$

$$\text{or } 3x + 7y = 0$$

Comparing the given equation with $ax + by + c = 0$,

We get, $a = 3$; $b = 7$; $c = 0$

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(v) Given equation, $2x + 3 = 0$
or $2x + 0y + 3 = 0$

Comparing the given equation with $ax + by + c = 0$,

We get, $a = 2$; $b = 0$; $c = 3$

(vi) Given equation, $y - 5 = 0$
or $0x + y - 5 = 0$

Comparing the given equation with $ax + by + c = 0$,

We get, $a = 0$; $b = 1$; $c = -5$

(vii) Given equation, $4 = 3x$

or $3x + 0y - 4 = 0$

Comparing the given equation with $ax + by + c = 0$,

We get, $a = 3$; $b = 0$; $c = -4$

(viii) Given equation, $y = x/2$

Or $x - 2y = 0$

Or $x - 2y + 0 = 0$

Comparing the given equation with $ax + by + c = 0$,

We get, $a = 1$; $b = -2$; $c = 0$

Question 2: Write each of the following as an equation in two variables:

(i) $2x = -3$ **(ii)** $y = 3$ **(iii)** $5x = 7/2$ **(iv)** $y = 3/2x$

Solution:

(i) Given equation, $2x = -3$

The above equation can be written in two variables as,

$2x + 0y + 3 = 0$

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(ii) Given equation, $y = 3$

The above equation can be written in two variables as,

$$0x + y - 3 = 0$$

(iii) Given equation, $5x = 7/2$

The above equation can be written in two variables as,

$$5x + 0y - 7/2 = 0$$

$$\text{or } 10x + 0y - 7 = 0$$

(iv) Given equation, $y = 3/2 x$

The above equation can be written in two variables as,

$$2y = 3x$$

$$3x - 2y = 0$$

$$3x - 2y + 0 = 0$$

Question 3: 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.

Solution:

Let the cost of a fountain pen be y and cost of a ball pen be x .

According to the given statement,

$$x = y/2 - 5$$

$$\text{or } 2x = y - 10$$

$$\text{or } 2x - y + 10 = 0$$

Which is required linear equation.