

VIDYA BHAWAN BALIKA VIDYA PITH

शक्तिउत्थानआश्रमलखीसरायबिहार

Class 09

Sub-.Maths

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

$y = 3x+5$ has

1. A unique solution
2. Only two solutions
3. Infinitely many solutions

Solution:

Let us substitute different values for x in the linear equation $y = 3x+5$,

x	0	1	2	100
y , where $y=3x+5$	5	8	11	305

From the table, it is clear that x can have infinite values, and for all the infinite values of x , there are infinite values of y as well.

Hence, (iii) infinitely many solutions is the only option true.

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

(i) $2x+y = 7$

Solution:

To find the four solutions of $2x+y = 7$ we substitute different values for x and y

Let $x = 0$

Then,

$$2x+y = 7$$

$$(2 \cdot 0)+y = 7$$

$$y = 7$$

$$(0,7)$$

Let $x = 1$

Then,

$$2x + y = 7$$

$$(2 \times 1) + y = 7$$

$$2 + y = 7$$

$$y = 7 - 2$$

$$y = 5$$

(1,5)

Let $y = 1$

Then,

$$2x + y = 7$$

$$(2x) + 1 = 7$$

$$2x = 7 - 1$$

$$2x = 6$$

$$x = 6/2$$

$$x = 3$$

(3,1)

Let $x = 2$

Then,

$$2x + y = 7$$

$$(2 \times 2) + y = 7$$

$$4 + y = 7$$

$$y = 7 - 4$$

$$y = 3$$

(2,3)

The solutions are (0, 7), (1,5), (3,1), (2,3)