

Mathematics

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(Chapter – 3) (Pair of Linear Equations in Two Variables)(Exemplar Problems)
(Class – X)

Exercise 3.1

Choose the correct answer from the given four options:

Question 8:

The value of c for which the pair of equations $cx - y = 2$ and $6x - 2y = 3$ will have infinitely many solutions is

- (A) 3 (B) -3 (C) -12 (D) no value

Answer 8:

(D) no value

Solution:

The given equations are $cx - y - 2 = 0$ and $6x - 2y - 3 = 0$.

Comparing with $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$, we have

$$\frac{a_1}{a_2} = \frac{c}{6}, \quad \frac{b_1}{b_2} = \frac{-1}{-2} = \frac{1}{2} \quad \text{and} \quad \frac{c_1}{c_2} = \frac{-2}{-3} = \frac{2}{3}$$

For infinite many solutions, we should have

$$\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$$

But according to the above values $\frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

So, there is no value of c exist for which the equations have infinite solutions.

Hence, the option (D) is correct.

