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3. Check which of the following are solutions of the equation x−2y = 4 and which are not:

(i) (0, 2)

(ii) (2, 0)

(iii) (4, 0)

(iv) (√2, 4√2)

(v) (1, 1)

Solutions:

(i) (0, 2)

(x,y) = (0,2)

Here, x=0 and y=2

Substituting the values of x and y in the equation x−2y = 4, we get,

x−2y = 4

$\Longrightarrow$ 0 − (2×2) = 4

But, -4 4

(0, 2) is **not** a solution of the equation x−2y = 4

(ii) (2, 0)

(x,y) = (2, 0)

Here, x = 2 and y = 0

Substituting the values of x and y in the equation x -2y = 4, we get,

x -2y = 4

$\Longrightarrow$ 2-(2×0) = 4

$\Longrightarrow$ 2 -0 = 4

But, 2 ≠ 4

(2, 0) is **not** a solution of the equation x-2y = 4

(iii) (4, 0)

Solution:

(x,y) = (4, 0)

Here, x= 4 and y=0

Substituting the values of x and y in the equation x -2y = 4, we get,

$x-2y = 4$

$\Longrightarrow 4 - 2\times0 = 4$

$\Longrightarrow 4-0 = 4$

$\Longrightarrow 4 = 4$

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

(iv) (√2,4√2)

Solution:

(x,y) = (√2,4√2)

Here, $x = \sqrt{2}$ and $y = 4\sqrt{2}$

Substituting the values of x and y in the equation $x-2y = 4$, we get,

$x -2y = 4$

$\Longrightarrow \sqrt{2}-(2\times4\sqrt{2}) = 4$

$\sqrt{2}-8\sqrt{2} = 4$

But, $-7\sqrt{2} \neq 4$

(√2,4√2) is **not** a solution of the equation $x-2y = 4$

(v) (1, 1)

Solution:

(x,y) = (1, 1)

Here, x= 1 and y= 1

Substituting the values of x and y in the equation $x-2y = 4$, we get,

$x -2y = 4$

$\Longrightarrow 1 - (2 \times 1) = 4$

$\Longrightarrow 1 - 2 = 4$

But, $-1 \neq 4$

(1, 1) is **not** a solution of the equation $x - 2y = 4$