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برائے مہربانی نوٹس کا پی اور استعمال کرتے وقت اس لائسنس کا خیال رکھیں۔

Q.1 Solve the following pair of equations in x and y graphically.

$$x + y = 0, \quad 2x - y + 3 = 0.$$

Solution: $x + y = 0 \Rightarrow y = -x$.

When $x = 0$ then $y = 0$.

When $x = 1$ then $y = -1$.

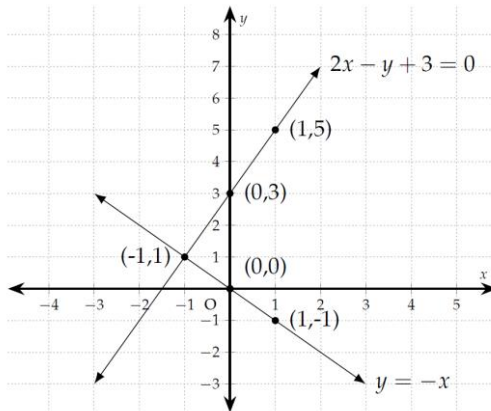
So the points $(0, 0)$ and $(1, -1)$ lies on the graph of $x + y = 0$.

Take $2x - y + 3 = 0 \Rightarrow y = 2x + 3$.

When $x = 0$ then $y = 3$.

When $x = 1$ then $y = 5$.

So the points $(0, 3)$ and $(1, 5)$ lies on the graph of $2x - y + 3 = 0$.



From graph, we see $(-1, 1)$ is the common point in both equations.

Q.2 Solve the following pair of equations in x and y graphically.

$$x + y + 1 = 0, \quad x - 2y = -1.$$

Solution: $x + y + 1 = 0$

$$\Rightarrow y = -x - 1.$$

When $x = -1$ then $y = 0$.

When $x = 0$ then $y = -1$.

So the points $(-1, 0)$ and $(0, -1)$ lies on the graph of $x + y + 1 = 0$.

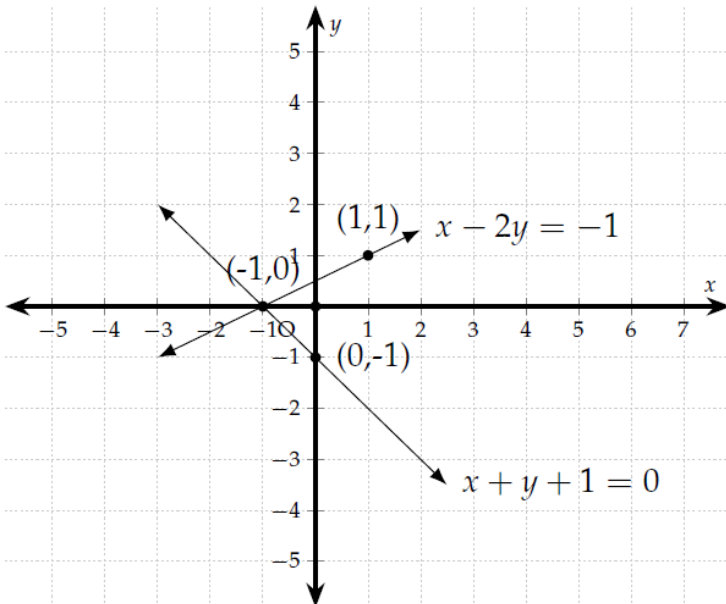
Take $x - 2y = -1$

$$\Rightarrow y = \frac{1}{2}x + \frac{1}{2}.$$

When $x = -1$ then $y = 0$.

When $x = 1$ then $y = 1$.

So the points $(-1, 0)$ and $(1, 1)$ lies on the graph of $x - 2y = -1$.



From graph, we see $(-1, 0)$ is the common point in both equations.

Q. 3 Solve the following pair of equations in x and y graphically.

$$2x + y = 0, \quad x + 2y = 2.$$

Solution: $2x + y = 0$

$$\Rightarrow y = -2x.$$

When $x = 0$ then $y = 0$.

When $x = 1$ then $y = -2$.

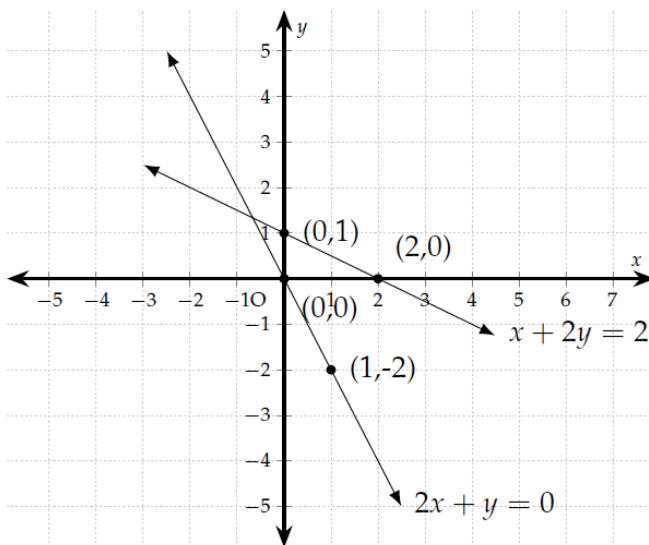
So the points $(0,0)$ and $(1,-2)$ lies on the graph of $2x + y = 0$.

Take $x + 2y = 2 \Rightarrow 2y = 2 - x \Rightarrow y = 1 - \frac{1}{2}x$.

When $x = 0$ then $y = 1$.

When $x = 2$ then $y = 0$.

So the points $(0,1)$ and $(2,0)$ lies on the graph of $x + 2y = 2$.



From graph, we see $(-0.7, 1.3)$ is the common point in both equations.

Q. 4 Solve the following pair of equations in x and y graphically.

$$x + y - 1 = 0, \quad x - y + 1 = 0.$$

Solution: $x + y - 1 = 0$

$$\Rightarrow y = -x + 1.$$

When $x = -1$ then $y = 2$.

When $x = 0$ then $y = 1$.

So the points $(-1, 2)$ and $(0, 1)$ lies on the graph of $x + y - 1 = 0$.

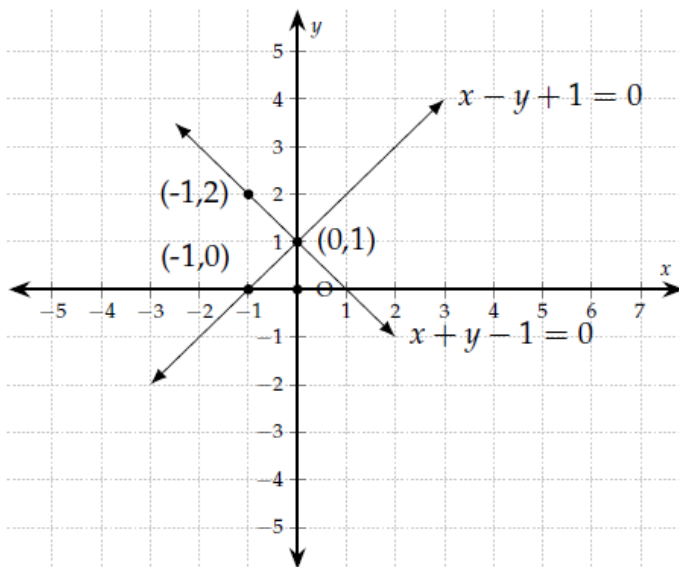
Take $x - y + 1 = 0$

$$\Rightarrow y = x + 1.$$

When $x = -1$ then $y = 0$.

When $x = 0$ then $y = 1$.

So the points $(-1, 0)$ and $(0, 1)$ lies on the graph of $x - y + 1 = 0$.



From graph, we see $(0, 1)$ is the common point in both equations.

Q.5 Solve the following pair of equations in x and y graphically.

$$2x + y - 1 = 0, \quad x = -y.$$

Solution: $2x + y - 1 = 0 \Rightarrow y = 1 - 2x.$

When $x = -1$ then $y = 3.$

When $x = 0$ then $y = 1.$

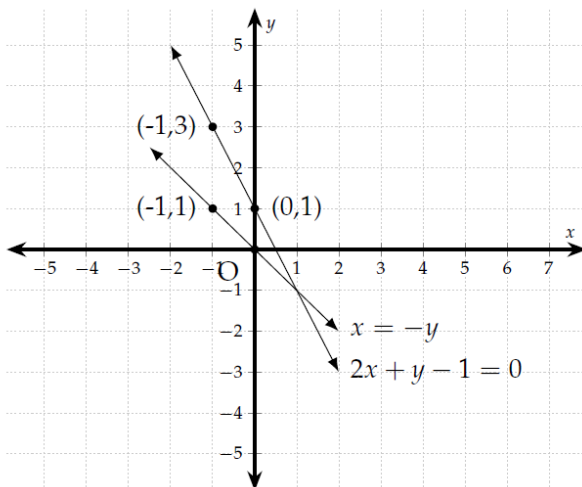
So the points $(-1, 3)$ and $(0, 1)$ lies on the graph of $2x + y - 1 = 0.$

Take $y = -x$

When $x = -1$ then $y = 1.$

When $x = 0$ then $y = 0.$

So the points $(-1, 1)$ and $(0, 0)$ lies on the graph of $x = -y.$



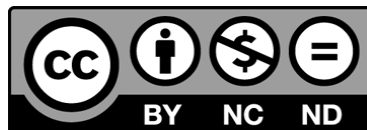
From graph, we see $(1, -1)$ is the common point in both equations.

Exercise 8.3 (Solutions): Ver: 1.0

Mathematics 9th (Science)

Punjab Textbook Board

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