Exercise 8.3

Q.1
$$x + y = 0 \text{——}(I) \quad \text{and}$$
$$2x - y + 3 = 0 - (II)$$

From equation   I

    from equation
II

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

x	$y = -x$	(x,y)
1	$-1(1) = -1$	$(1,-1)$
2	$-(2) = -2$	$(2,-2)$

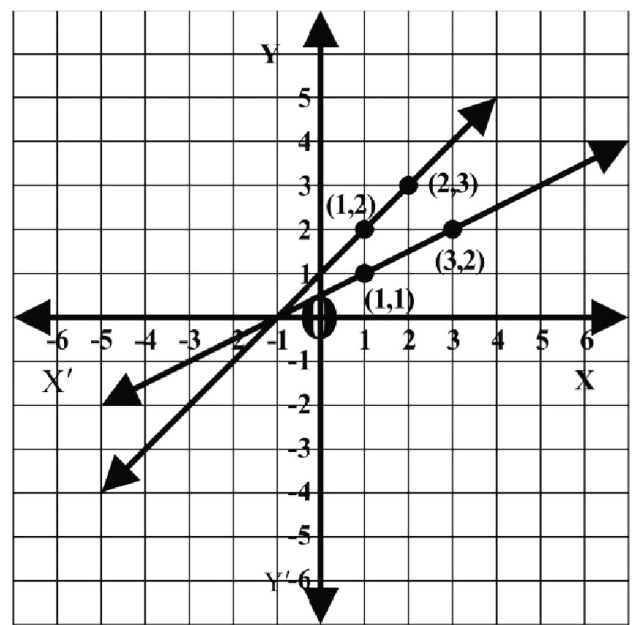| x	$y = 2x+3$	(x,y)
1	$2(1)+3 = 5$	$(1,5)$
-1	$2(-1)+3 = 1$	$(-1,1)$
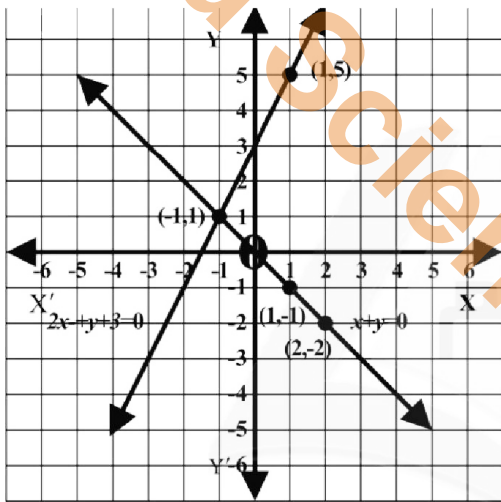
The point of intersection is a solution set
Solution Set $= \{(-1,1)\}$

Q.2
$$x - y + 1 = 0$$
$$x - 2y = -1$$
$$x + 1 = y$$
$$x + 1 = 2y$$
$$y = x + 1$$
$$\frac{x+1}{2} = y$$
Or
$$y = \frac{x+1}{2}$$

x	$y = x+1$	(x,y)
1	$1+1 = 2$	$(1,2)$
2	$2+1 = 3$	$(2,3)$

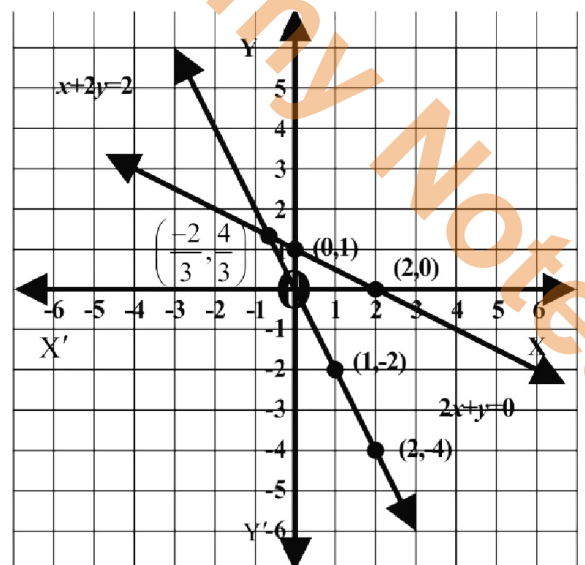| x	$y = \dfrac{x+1}{2}$	(x,y)
1	$\dfrac{1+1}{2} = \dfrac{2}{2} = 1$	$(1,1)$
3	$\dfrac{3+1}{2} = \dfrac{4}{2} = 2$	$(3,2)$

Point of intersection is a solution
set

Solution Set $= \{(-1,0)\}$

Q.3
$$2x + y = 0$$
$$x + 2y = 2$$
$$y = -2x$$
$$2y = 2 - x$$
$$y = \frac{2-x}{2}$$

x	$y = -2x$	(x,y)
1	$-2(1) = -2$	$(1,-2)$
2	$-2(2) = -4$	$(2,-4)$

x	$y = \dfrac{2-x}{2}$	(x,y)
0	$\dfrac{2-0}{2} = \dfrac{2}{2} = 1$	$(0,1)$
2	$\dfrac{2-2}{2} = \dfrac{0}{2} = 0$	$(2,0)$

Point of intersection is a solution

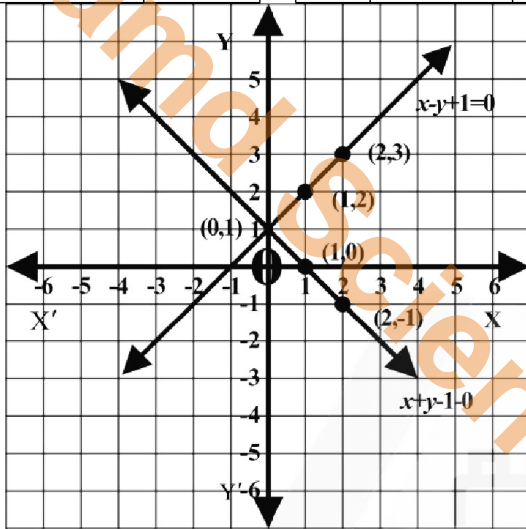**Solution Set** $= \left(\dfrac{-2}{3}, \dfrac{4}{3}\right)$

Q.4 $x + y - 1 = 0$

$x - y + 1 = 0$

$y = 1 - x$

$x + 1 = y$ Or $y = x + 1$

x	$y = 1-x$	x,y
1	$1-1 = 0$	(1,0)
2	$1-2 = -1$	(2,-1)

x	$y = x+1$	x,y
1	$1+1 = 2$	(1,2)
2	$2+1 = 3$	(2,3)

Point of intersection is a solution

set

Solution Set $= \{(0,1)\}$

Point of intersection is a solution

set

Solution Set $= \{(1,-1)\}$

Q.5 $2x + y - 1 = 0$

$x = -y$

$y = 1 - 2x$

$y = -x$

x	$y = 1-2x$	(x,y)
1	$1-2(1)= -1$	(1,-1)
2	$1-2(2) = -3$	(2,-3)

x	$y = -x$	(x,y)
1	$-(1) = -1$	(1,-1)
2	$-(2) = -2$	(2,-2)