Exercise 8.2

1. Draw the conversion graph between litres and gallons using the relation 9 liters = 2 gallons (approximately), and taking litres along horizontal axis and gallons along vertical axis. From the graph, read

(i) the number of gallons in 18 litres

(ii) the number of litres in 8 gallons

$9\ litres = 2\ gallons$

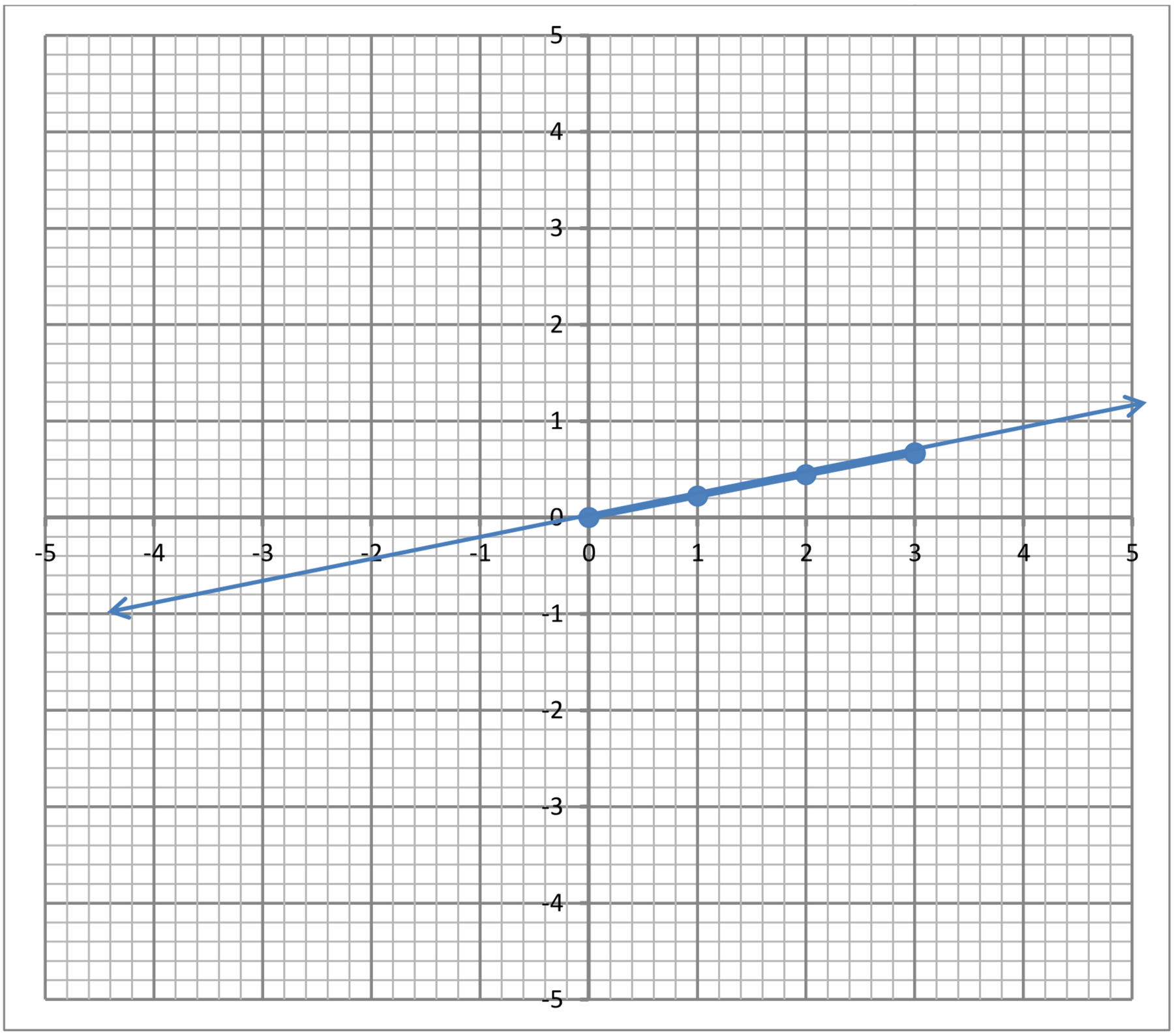
$1\ litre = \frac{2}{9}\ gallons$ or $1\ gallon = \frac{9}{2}\ liters$

$1\ litre = 0.222\ gallons$ or $1\ gallon = 4.5\ litres$

Let gallon be represented by y and litre by x.

$y = 0.222\ x$

x	y
0	0
1	0.222
2	0.444
3	0.666



(i) Number of gallons in 18 litres: $y = 0.222\ (18)$ = 4 gallons

(ii) Number of litres in 8 gallons. $\frac{9}{2}(8)$ = 36 litres

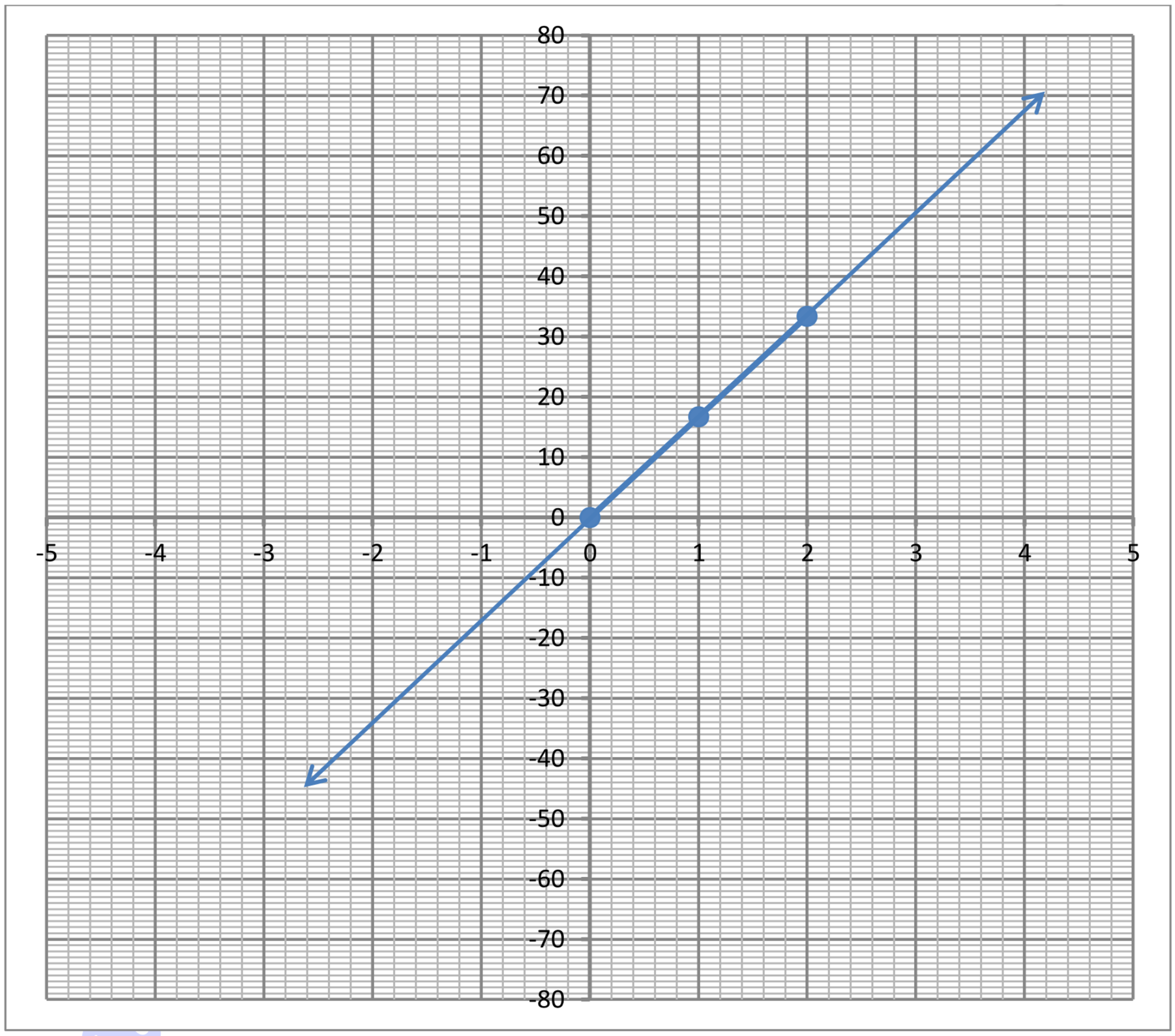
2. On 15.03.2008 the exchange rate of Pakistani currency and Saudi Riyal was as under:

1 S. Riyal = 16.70 Rupees

If Pakistani currency y is an expression of S. Riyal x, expressed under the rule $y = 16.70x$, then draw the conversion graph between these two currencies by taking S. Riyal along x-axis.

$y = 16.70x$

x	y
0	0
1	16.70
2	33.40



3. Sketch the graph of each of the following lines.

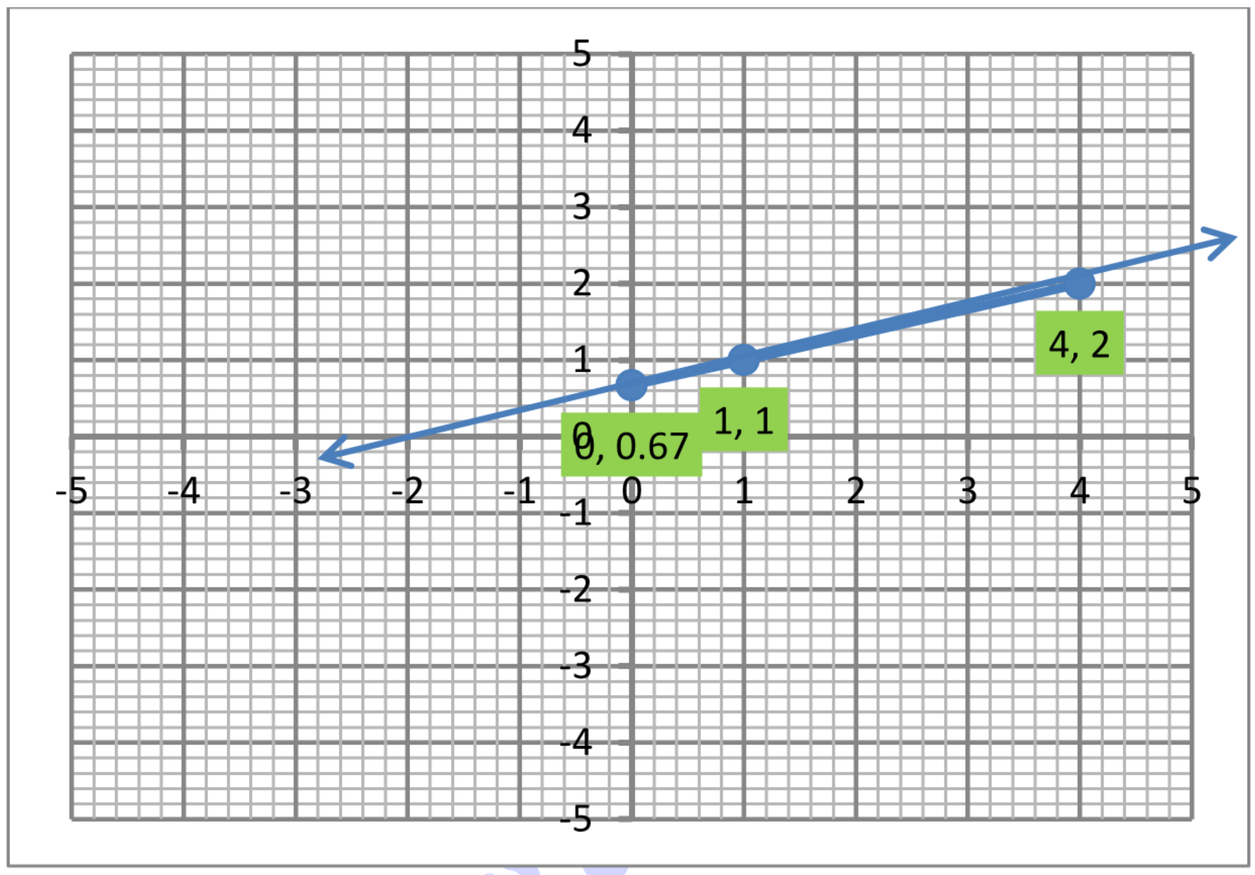
(a) $x - 3y + 2 = 0$

$-3y = -x - 2$

$y = \frac{-x-2}{-3}$

$y = \frac{x+2}{3}$

x	y
0	$\frac{0+2}{3} = \frac{2}{3} = 0.67$
1	$\frac{1+2}{3} = 1$
4	$\frac{4+2}{3} = 2$



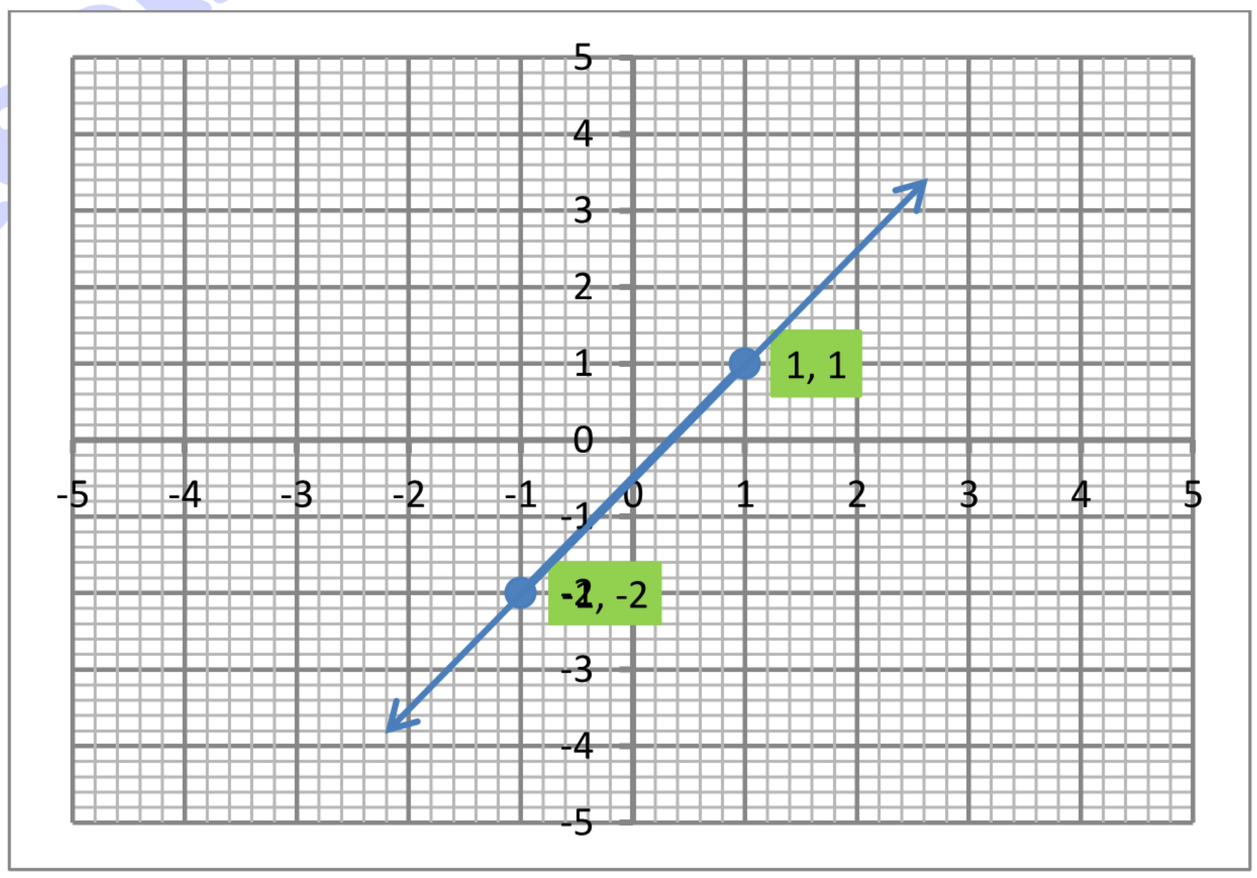
(b) $3x - 2y - 1 = 0$

$-2y = -3x + 1$

$y = \frac{-3x+1}{-2}$

$y = \frac{3x-1}{2}$

x	y
-1	$\frac{-3-1}{2} = \frac{-4}{2} = -2$
1	$\frac{3-1}{2} = 1$

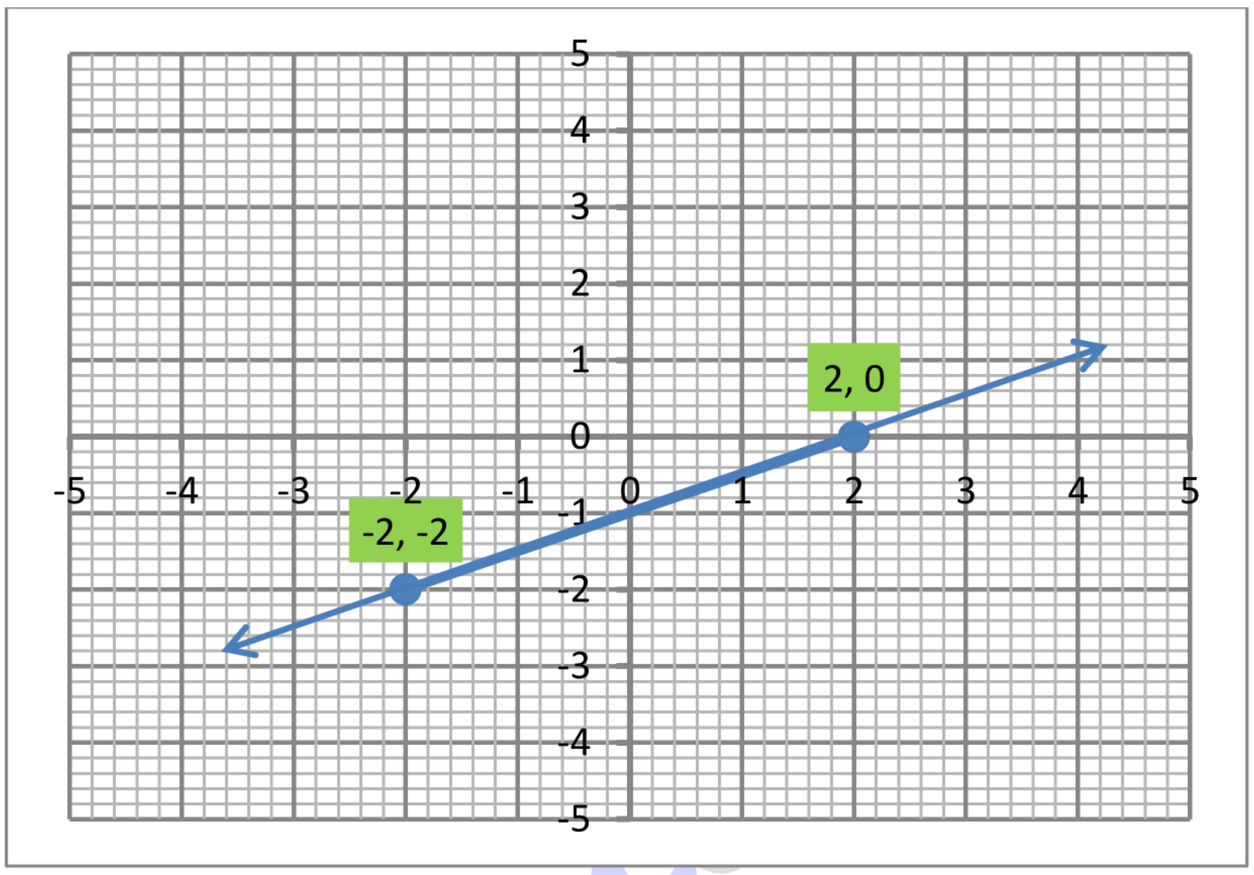


(c) $2y - x + 2 = 0$

$2y = x - 2$

$y = \frac{x-2}{2}$

x	y
-2	$\frac{-2-2}{2} = \frac{-4}{2} = -2$
2	$\frac{2-2}{2} = 0$

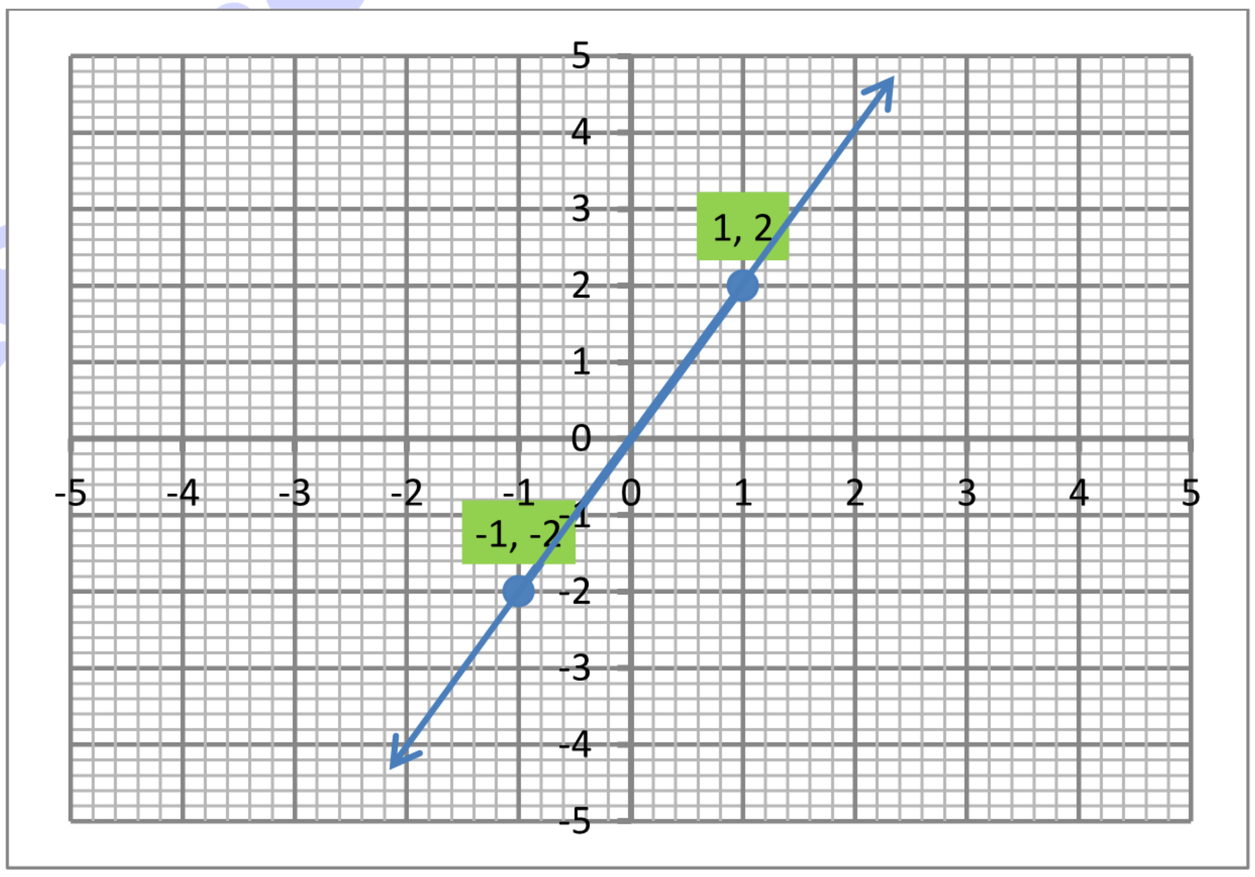


(d) $y - 2x = 0$

$y = 2x$

$y = 2x$

x	y
-1	-2
1	2

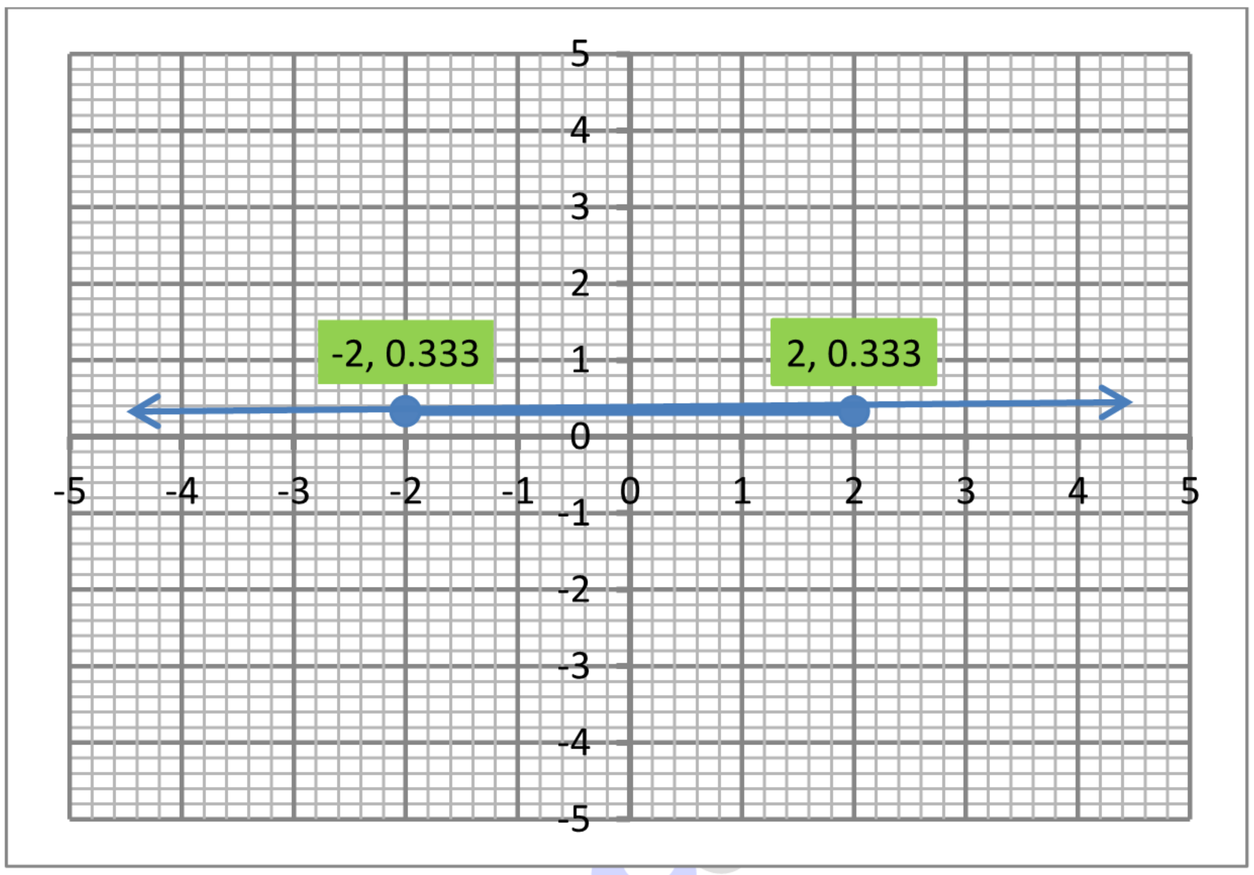


(e) $3y - 1 = 0$

$3y = 1$

$y = \frac{1}{3}$

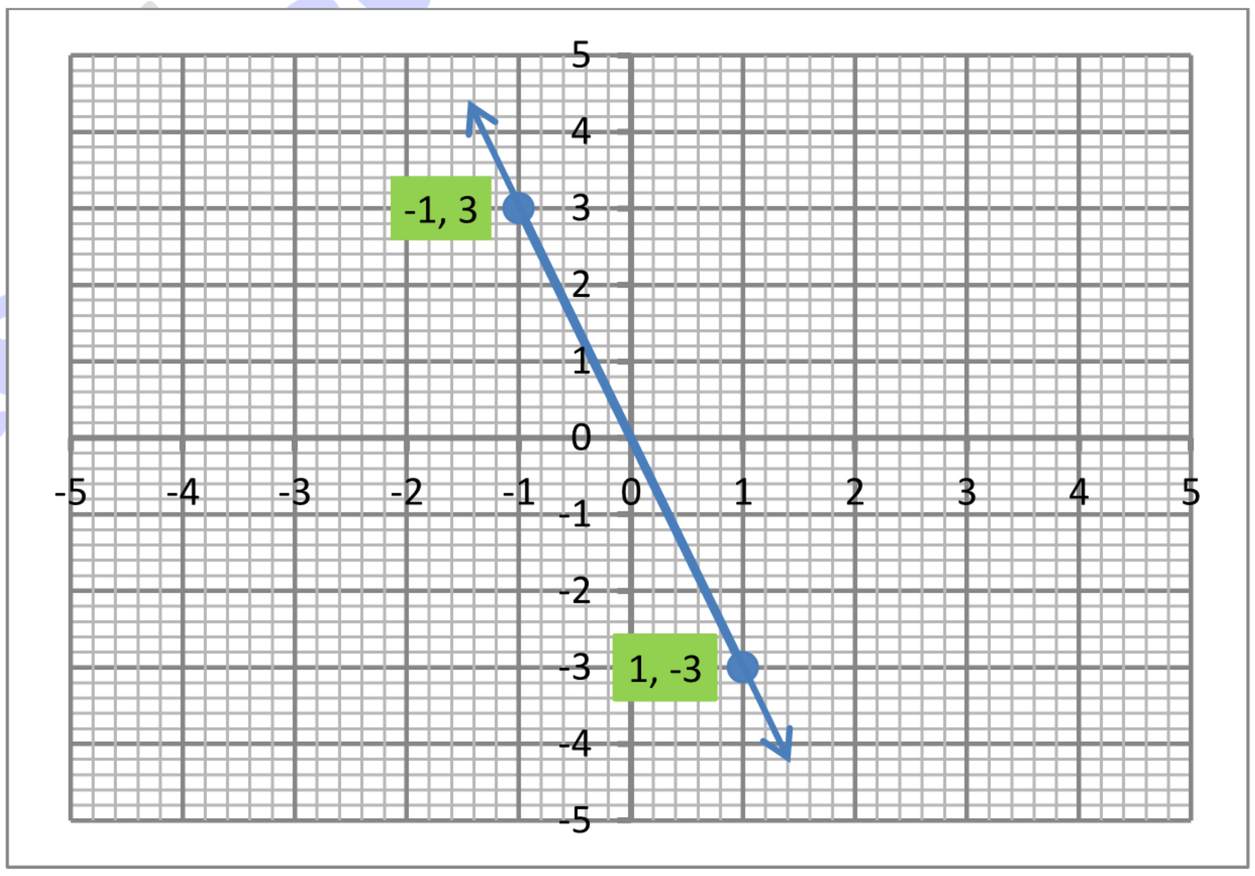
x	y
-2	$\frac{1}{3} = 0.333$
2	$\frac{1}{3} = 0.333$



(f) $y + 3x = 0$

$y = -3x$

x	y
-1	3
1	-3

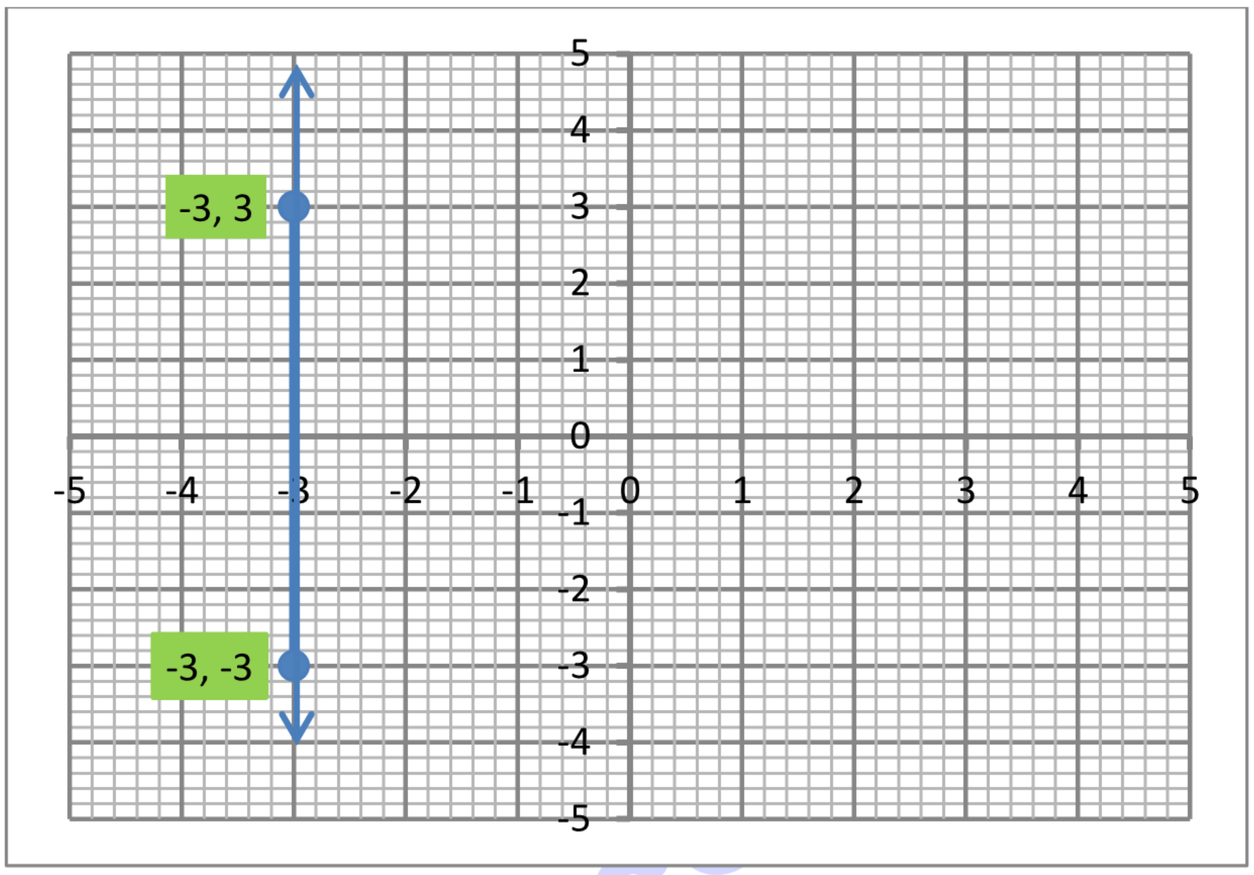


(g) $2x + 6 = 0$

$2x = -6$

$x = -3$

x	y
-3	3
-3	-3

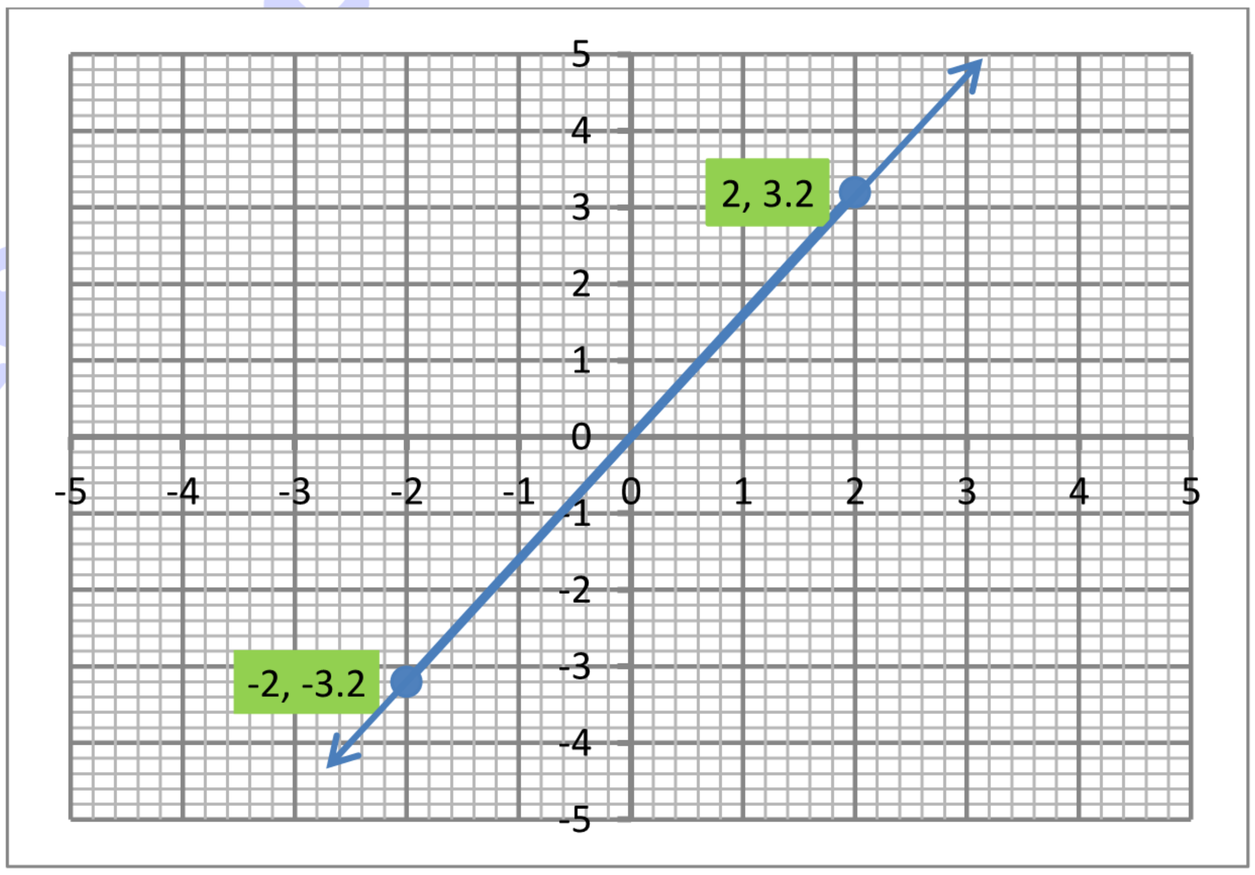


4. Draw the graph for following relations.

(i) One mile = 1.6 km

$y = 1.6x$

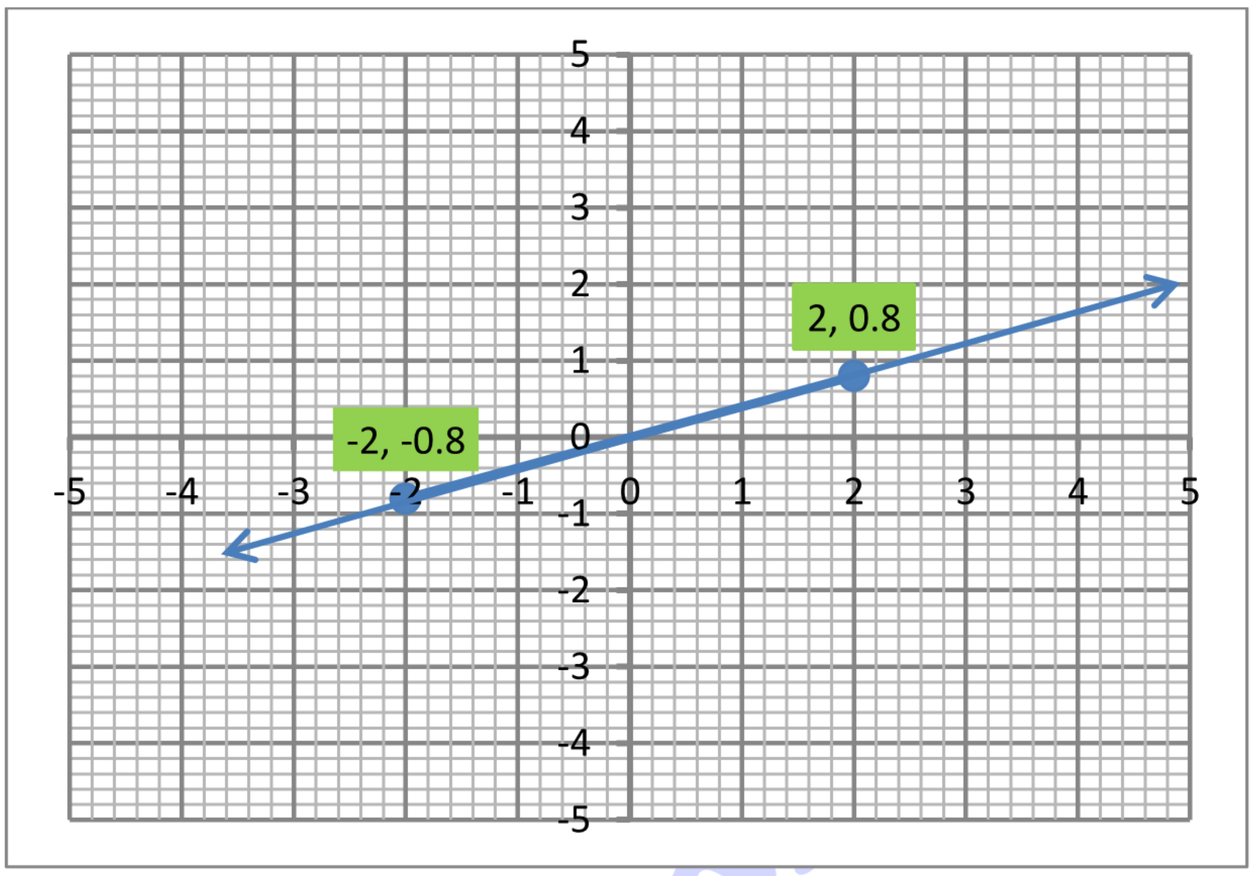
x	y
-2	-3.2
2	3.2



(ii) One acre = 0.4 Hectare

$y = 0.4x$

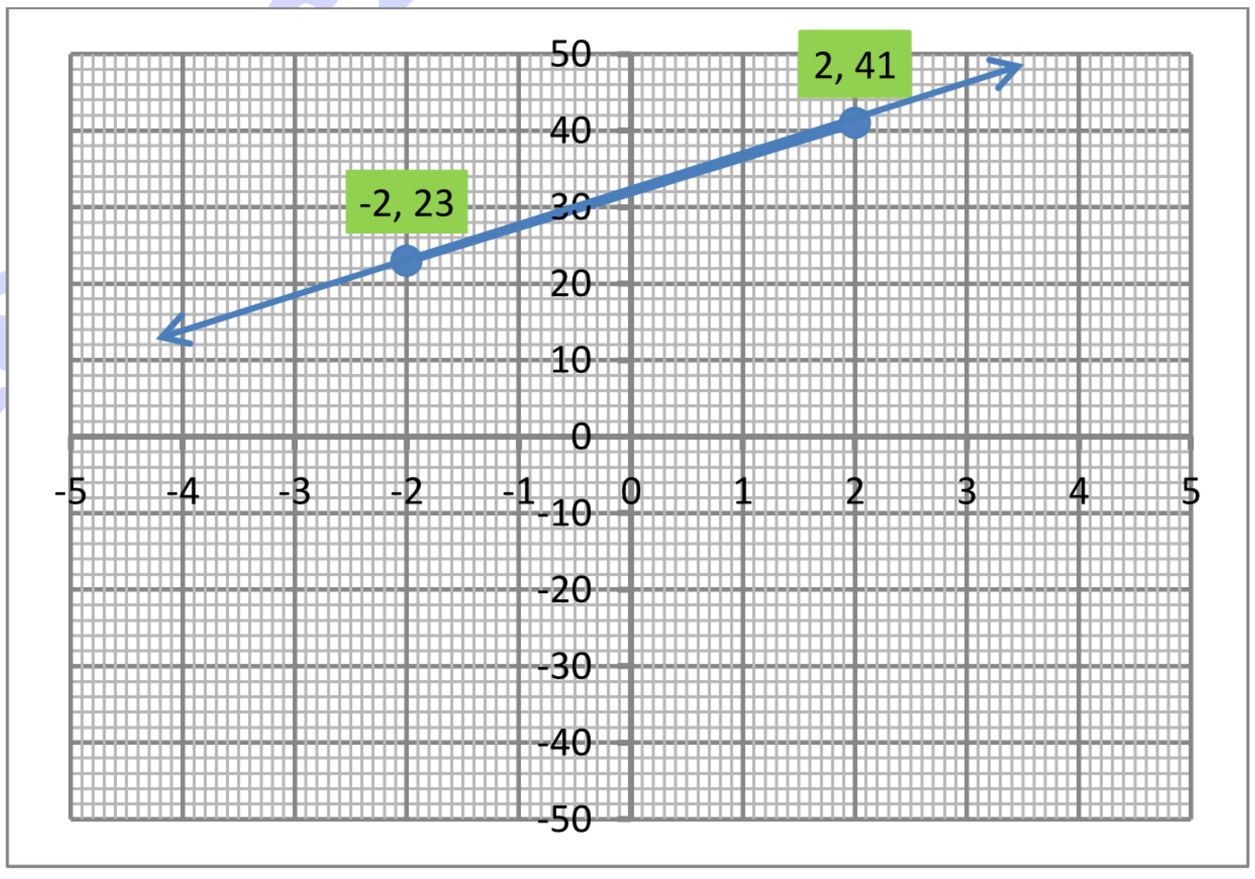
x	y
-2	-0.8
2	0.8



(iii) $F = \frac{9}{2}C + 32$

$y = \frac{9}{2}x + 32$

x	y
-2	$-9 + 32 = 23$
2	$9 + 32 = 41$



(iv) One Rupee = $\frac{1}{86}$ $

$y = \frac{1}{86}x$

$y = 0.012x$

x	y
-10	-0.12
10	0.12