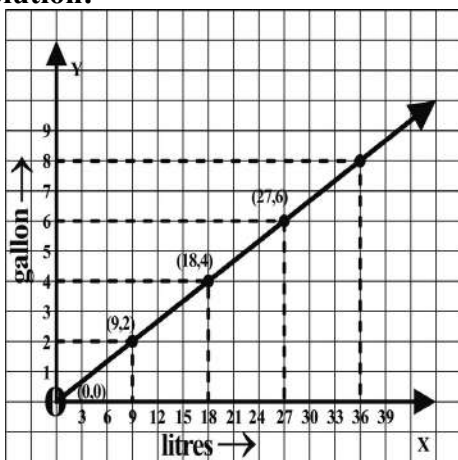**Mathematics-9**
Unit 8 – Exercise 8.2

Q1 Draw the conversion graph between liters and gallons using the relation 9 liters = 2 gallons (approximately) and taking liters along horizontal axis and gallons along vertical axis from the graph read.

(i)   The number of gallons in 18 liters.
(ii)   The number of liters in 8 gallons.

We know 9 liters = 2 gallons

$$1 \text{liters} = \frac{2}{9} \text{ gallons}$$

Solution:

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

x	0	9	18	27
y	0	2	4	6

18 litters=4 gallons
Scale   **(U.B)**
Along *X-axis*
3 litters = 1 box
Along *Y-axis*
1 gallon = 1 box

(i) The number of gallons in 18 liters.
Ans: =4 Gallons
(ii) The number of liters in 8 gallons.
Ans: =36 Liters

Q.2 On 15-03-2008 the exchange rate of Pakistani currency and Saudi Riyal was as under 1SRial = 16.70 rupees
(U.B)
If Pakistani currency *y* is an expression of S. Riyal *x* expressed under. The rule $y = 16.70\ x$ then draw the conversion graph between these two currencies by taking S. riyal along *x* axis.
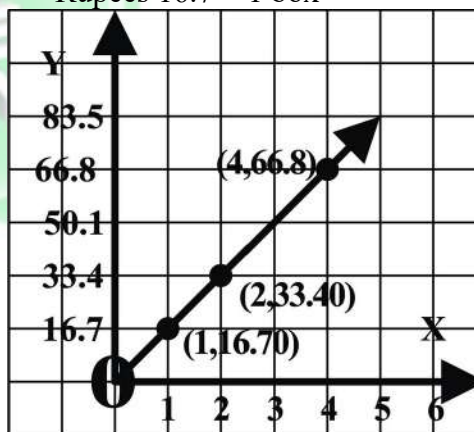
1SR = 16.70 Rupees
Scale
Along *X-axis*
1 SR =1 box
Along *Y-axis*
Rupees 16.7 = 1 box

x	1	2	3	4
y	16.70	33.4	50.1	66.8

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

(a) $x–3y +2 = 0$

$x+2 = 3y$

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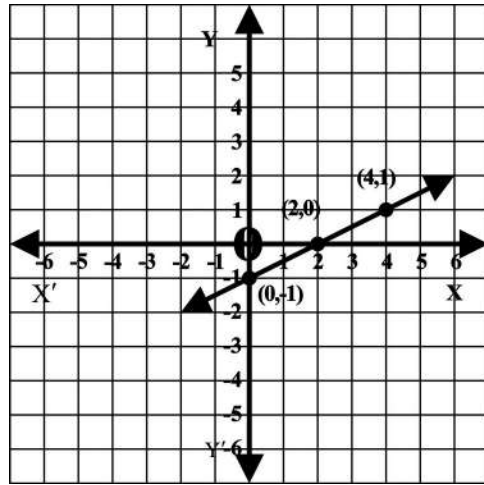
Or

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

x	1	4	-2
$y = \dfrac{x+2}{3}$	1	2	0
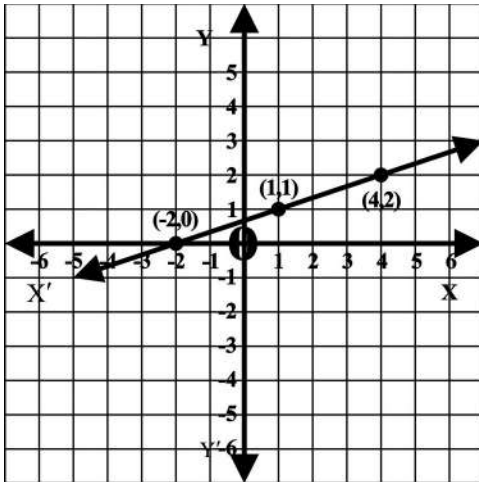
x	0	2	4
y	–1	0	1

(d) $y - 2x = 0$

X	0	1	2
Y	0	2	4

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

$3x - 1 = 2y$

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

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

x	1	3	–1
y	1	4	–2
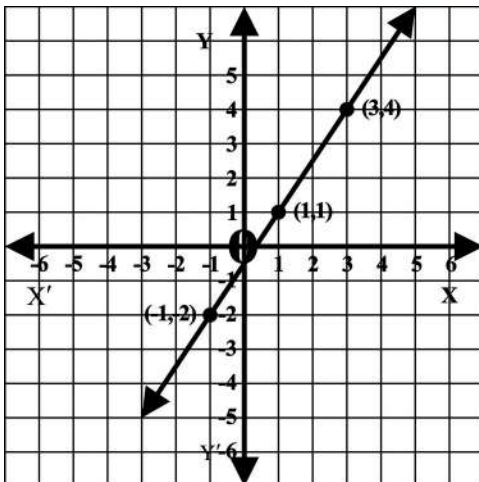
(c) $2y - x + 2 = 0$

$2y = x - 2$

$y = \dfrac{x - 2}{2}$
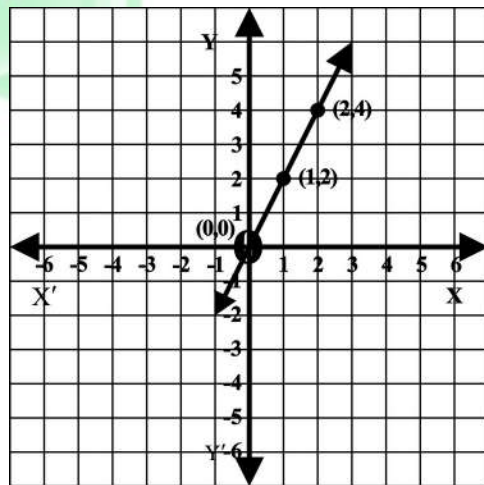
(e) $3y - 1 = 0$

$3y = 1$

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

x	-2	0	2

y	$\dfrac{1}{3}$	$\dfrac{1}{3}$	$\dfrac{1}{3}$

Y	3	0	-3

$$y + 3x = 0$$

$$y = -3x$$
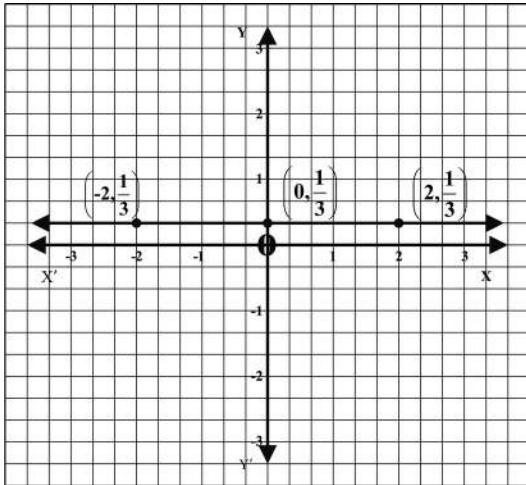
X	1	-1	0
y	-3	3	0
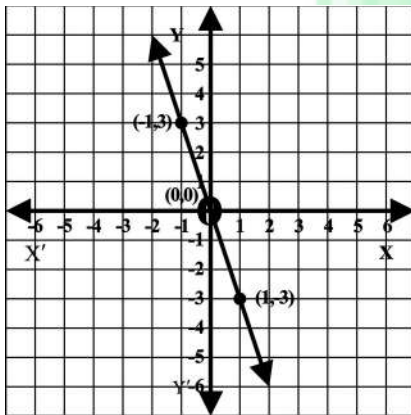
Q.4 Draw the graph for following relations

(i) One mile $=1.6km$

$$y = 1.6x$$

Scale
Along *x-axis*
1 Big Square = 1 Unit

Along *y-axis*
1 Big Square = 1.6 Units

x	0	1	2	3
y	0	1.6	3.2	4.8

$$2x + 6 = 0$$

$$2x = -6$$

$$x = \dfrac{-6}{2}$$

$$x = -3$$
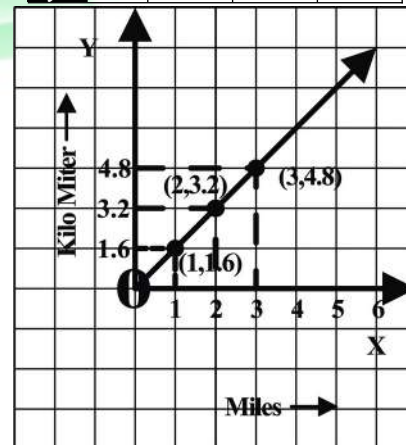
(ii) One acre $=0.4$ hectare

$$y = 0.4x$$

x	2	4
y	0.8	1.6

X	-3	-3	-3

Scale
Along *x-axis*
1 Big Square= 1 Unit

Along *y-axis*
1 Big Square = 0.4 Units

(iv) 1Rupee = $\dfrac{1}{86}$ $

Scale
Along *x-axis*
1 Big Square = 1 Unit
Along *y-axis*

1 Big Square = $\dfrac{1}{86}$ Units

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

x	0	1	2	3
y	0	$\dfrac{1}{86}$	$\dfrac{2}{86}$	$\dfrac{3}{86}$
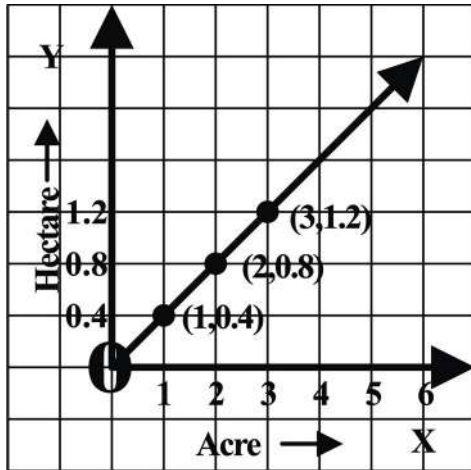
(iii) $F = \dfrac{9}{5}c + 32$

C	$F = \dfrac{9}{5}C + 32$
5	$\dfrac{9}{5} \times 5 + 32 = 41$
10	$\dfrac{9}{5} \times 10 + 32 = 50$
15	$\dfrac{9}{5} \times 15 + 32 = 59$
20	$\dfrac{9}{5} \times 20 + 32 = 68$

10° = Length of square

Where value of c = *x* and value of *f* = y

X	5	10	15	20
Y	41	50	59	68