Exercise 13.4

Page No: 13.32

Question 1: Give the geometric representations of the following equations

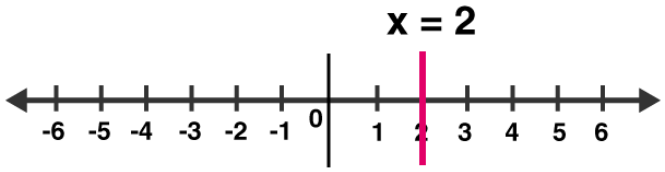
(a) on the number line (b) on the Cartesian plane:

(i) x = 2 (ii) y + 3 = 0 (iii) y = 3 (iv) 2x + 9 = 0 (v) 3x – 5 = 0

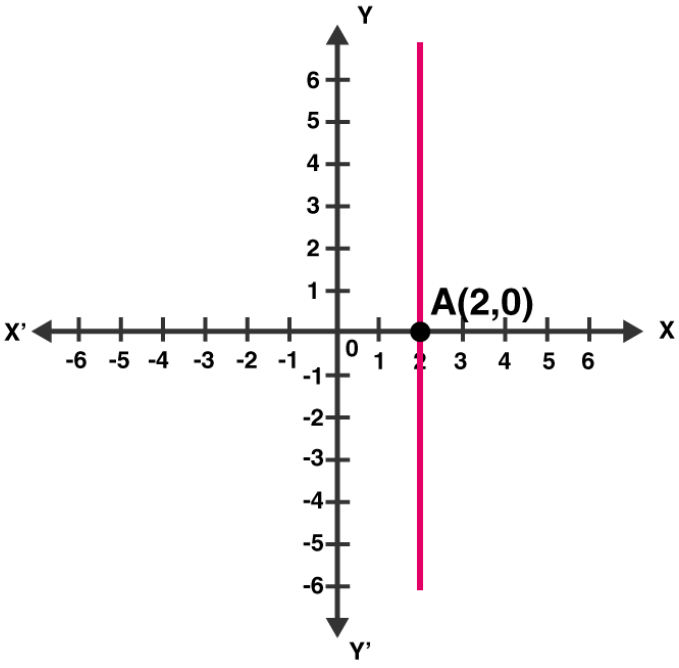
Solution:

(i) x = 2

The representation of equation on the number line:



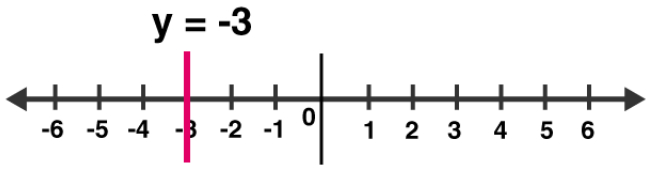
The representation of equation on the Cartesian plane:



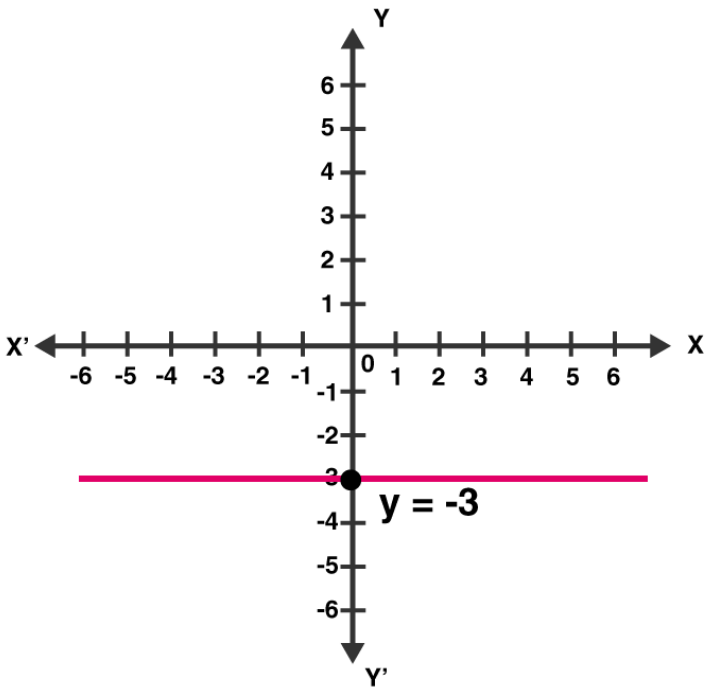
(ii) y + 3 = 0

or y = -3

The representation of equation on the number line:

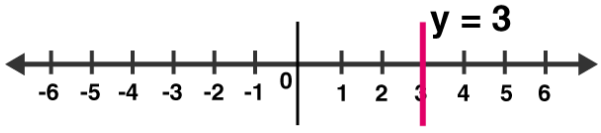


The representation of equation on the Cartesian plane:

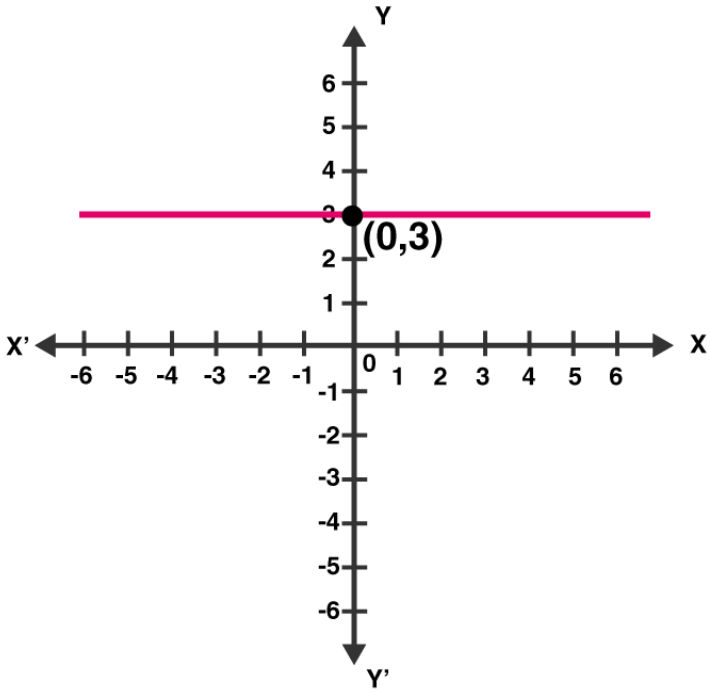


(iii) y = 3

The representation of equation on the number line:



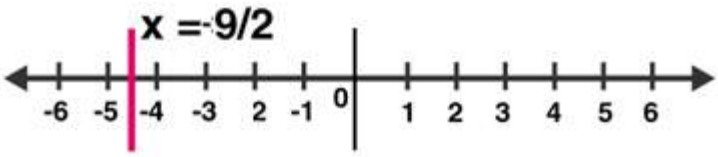
The representation of equation on the Cartesian plane:



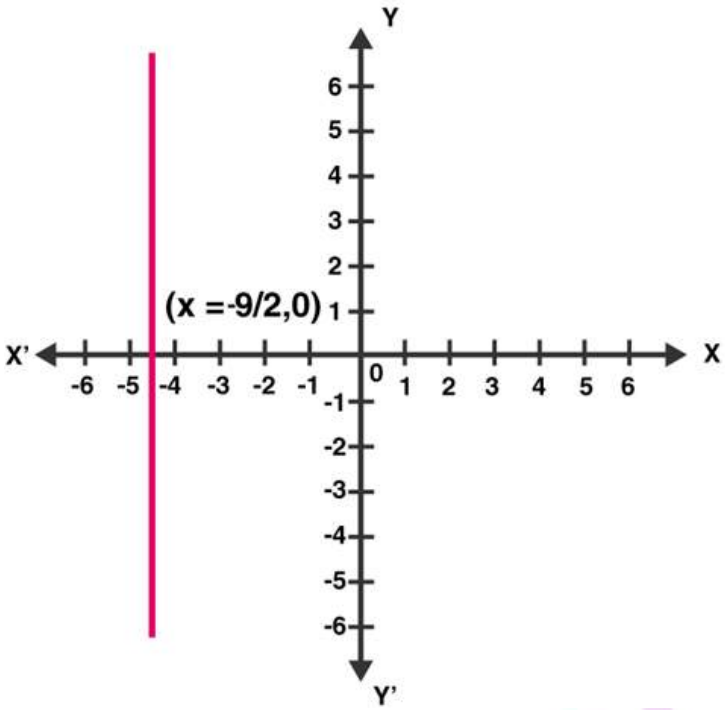
(iv) 2x + 9 = 0

or x = -9/2

The representation of equation on the number line:



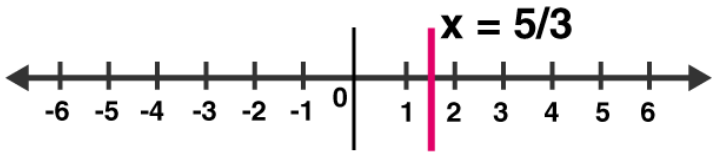
The representation of equation on the Cartesian plane:



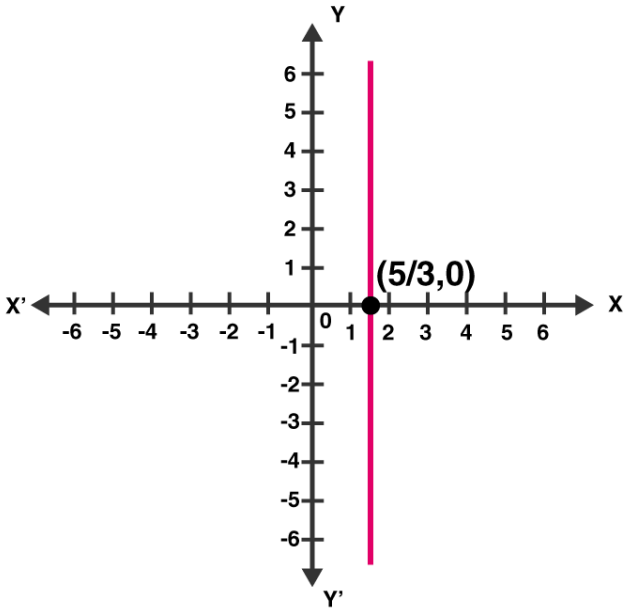
(v) 3x - 5 = 0

or x = 5/3

The representation of equation on the number line:



The representation of equation on the Cartesian plane:



Question 2 : Give the geometrical representation of 2x + 13 = 0 as an equation in

(i) one variable (ii) two variables

Solution:
2x + 13 = 0

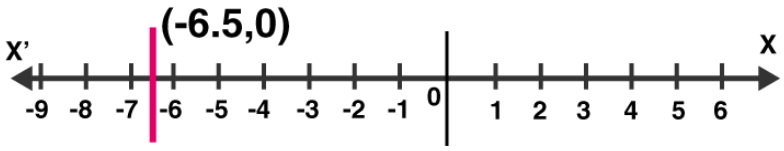
(i) Isolate given equation in x

Subtract 13 from both the sides
2x + 13 – 13 = 0 – 13

2x = -13
Divide each side by 2

x = -13/2 = -6.5

Which is an equation in one variable.



(ii) 2x + 13 = 0 can be written as 2x + 0y + 13 = 0

The representation of the solution on the Cartesian plane: A line parallel to y axis passing through the point (-13/2 , 0):