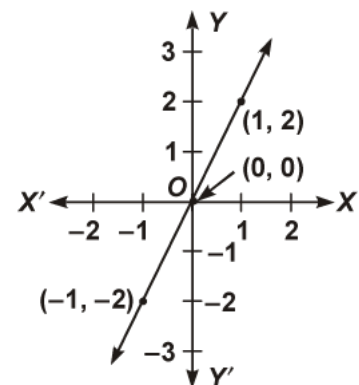


- Q1.** Which one of the following options is true, and why? $y = 3x + 5$ has
 (i) a unique solution, (ii) only two solutions, (iii) infinitely many solutions
- Q2.** Write the following as an equation in two variable: $x = -5$.
- Q3.** Write the following as an equation in two variable: $y = 2$.
- Q4.** Write the following as an equation in two variable: $2x = 3$.
- Q5.** Write the following as an equation in two variable: $5y = 2$.
- Q6.** Find four different solutions of the equation $x + 2y = 6$.
- Q7.** Given the point $(1, 2)$ find the equation of a line on which it lies. How many such equations are there?
- Q8.** Draw the graph of $x + y = 7$.
- Q9.** The cost of a notebook is twice the cost of a pen. Write a linear equation in two variables to represent this statement.
 (Take the cost of a notebook to be Rs. x and that of a pen to be Rs. y).
- Q10.** Find the value of k , if $x = 2, y = 1$ is a solution of the equation $2x + 3y = k$.
- Q11.** Give the equations of two lines passing through $(2, 14)$. How many more such lines are there, and why?
- Q12.** If the point $(3, 4)$ lies on the graph of the equation $3y = ax + 7$, find the value of a .
- Q13.** Give the geometric representations of $y = 3$ as an equation
 (i) in one variable (ii) in two variables
- Q14.** Give the geometric representations of $2x + 9 = 0$ as an equation
 (i) in one variable (ii) in two variables
- Q15.** For each of the graphs given in figure select the equation whose graph it is from the choices given below:

For figure

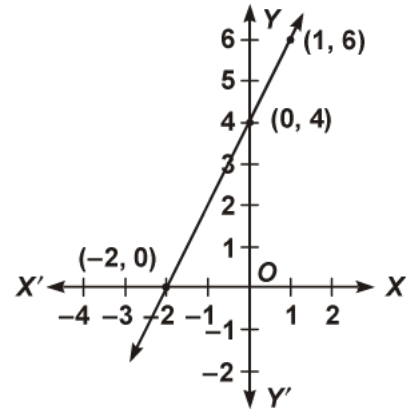
- (i) $x + y = 0$ (ii) $y = 2x$
 (iii) $y = x$ (iv) $y = 2x + 1$



Q16. For each of the graphs given in figure select the equation whose graph it is from the choices given below:

For figure

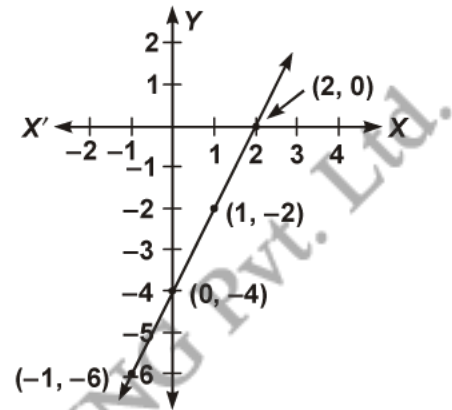
- (i) $x + y = 0$ (ii) $y = 2x$
 (iii) $y = 2x + 4$ (iv) $y = x - 4$



Q17. For each of the graphs given in figure select the equation whose graph it is from the choices given below:

For figure

- (i) $x + y = 0$ (ii) $y = 2x$
 (iii) $y = 2x + 1$ (iv) $y = 2x - 4$



Q18. Write the following equation in the form $ax + by + c = 0$ and indicate the values of a , b and c in this case: $2x + 3y = 4.37$.

Q19. Write the following equation in the form $ax + by + c = 0$ and indicate the values of a , b and c in this case: $x - 4 = \sqrt{3}y$.

Q20. Write the following equation in the form $ax + by + c = 0$ and indicate the values of a , b and c in this case: $4 = 5x - 3y$.

Q21. Write the following equation in the form $ax + by + c = 0$ and indicate the values of a , b and c in this case: $2x = y$.

Q22. Find two solution for each of the following equation: $4x + 3y = 12$.

Q23. Find two solution for each of the following equation: $2x + 5y = 0$.

Q24. Find two solution of the following equation: $3y + 4 = 0$.

Q25. Write four solution of the following equation: $2x + y = 7$.

Q26. Write four solution of the following equation: $\pi x + y = 9$.

Q27. Write four solution of the following equation: $x = 4y$.

Q28. Check which of the following are solutions of the equation $x - 2y = 4$ and which are not:

- (i) $(\sqrt{2}, 4\sqrt{2})$ (ii) $(1, 1)$

Q29. You know that the force applied on a body is directly proportional to the acceleration produced in the body. Write an equation to express this situation and plot the graph of the equation.

Q30. The taxi fare in a city is as follows: For the first kilometre, the fare is Rs. 8 and for the subsequent distance it is Rs 5 per km. Taking the distance covered as x km and total fare as Rs y , write a linear equation for this information, and draw its graph.

Q31. If the work done by a body on application of a constant force is directly proportional to the distance travelled by the body, express this in the form of an equation in two variables and draw the graph of the same by taking the constant force as 5 units. Also read from the graph the work done when the distance travelled by the body is

- (i) 2 units (ii) 0 unit

Q32. Yamini and Fatima, two students of Class IX of a school, together contributed Rs. 100 towards the Prime Minister's Relief Fund to help the earthquake victims. Write a linear equation which satisfies this data. (You may take their contributions as Rs x and Rs. y). Draw the graph of the same.

Q33. Express the following linear equations in the form $ax + by + c = 0$ and indicate the values of a , b and c in each case:

- (i) $2x + 3y = 9.35$ (ii) $2x = -5y$

Q34. Check which of the following are solutions of the equation $x - 2y = 4$ and which are not:

- (i) $(0, 2)$ (ii) $(2, 0)$ (iii) $(4, 0)$

Q35. Draw the graph of each of the following linear equations in two variables:

- (i) $x + y = 4$ (ii) $x - y = 2$

Q36. Draw the graph of each of the following linear equations in two variables:

- (i) $y = 3x$ (ii) $3 = 2x + y$

Q37. Express the following linear equations in the form $ax + by + c = 0$ and indicate the values of a , b and c in each case:

- (i) $x = 3y$ (ii) $5 = 2x$

Q38. Express the following linear equations in the form $ax + by + c = 0$ and indicate the values of a , b and c in each case:

- (i) $x - \frac{y}{5} - 10 = 0$ (ii) $3x + 2 = 0$

Q39. Express the following linear equations in the form $ax + by + c = 0$ and indicate the values of a , b and c in each case:

- (i) $-2x + 3y = 6$ (ii) $y - 2 = 0$

Q40. From the choices given below, choose the equation whose graphs are given in figure(a) and figure(b):

For figure (a)

- (i) $y = x$
 (ii) $x + y = 0$
 (iii) $y = 2x$
 (iv) $2 + 3y = 7x$

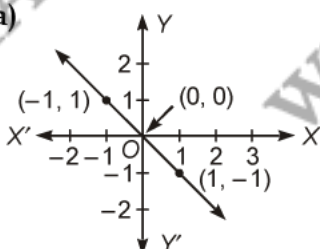


Figure (a)

For figure (b)

- (i) $y = x + 2$
 (ii) $y = x - 2$
 (iii) $y = -x + 2$
 (iv) $x + 2y = 6$

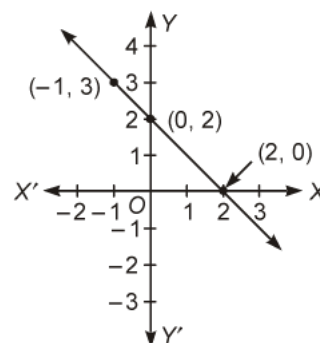


Figure (b)

Q41. Solve the equation $2x + 1 = x - 3$, and represent the solution(s) on (i) the number line, (ii) the cartesian plane.

Q42. In countries like USA and Canada, temperature is measured in Fahrenheit, whereas in countries like India, it is measured in Celsius. Here is a linear equation that converts Fahrenheit to Celsius:

$$F = \left(\frac{9}{5}\right)C + 32$$

- (i) Draw the graph of the linear equation above using Celsius for x -axis and Fahrenheit for y -axis.
- (ii) If the temperature is 30°C , what is the temperature in Fahrenheit?
- (iii) If the temperature is 95°F , what is the temperature in Celsius?
- (iv) If the temperature is 0°C , what is the temperature in Fahrenheit and if the temperature is 0°F , what is the temperature in Celsius?
- (v) Is there a temperature which is numerically the same in both Fahrenheit and Celsius? If yes, find it.

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S1. (iii) Because for every value of x , there is a corresponding value of y and vice-versa.

S2. $1x + 0y + 5 = 0.$

S3. $0x + 1y - 2 = 0.$

S4. $2x + 0y - 3 = 0.$

S5. $0x + 5y - 2 = 0.$

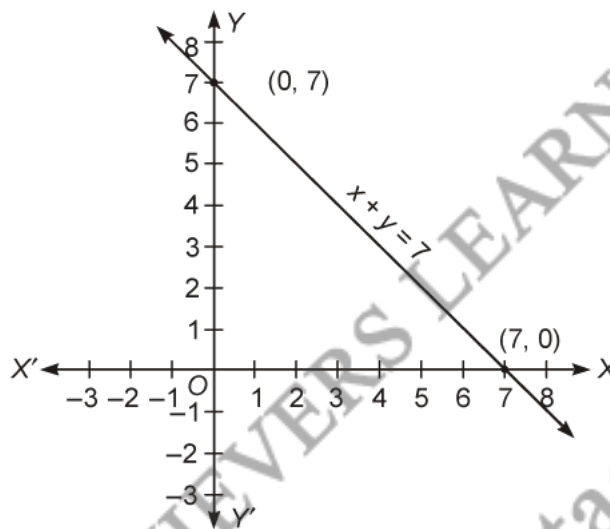
S6. $(2, 2) (0, 3) (6, 0) (4, 1).$

S7. There are infinitely many linear equations which are satisfied by the coordinates of the point $(1, 2).$

S8.

$$x + y = 7$$

| | | |
|-----|---|---|
| x | 0 | 7 |
| y | 7 | 0 |



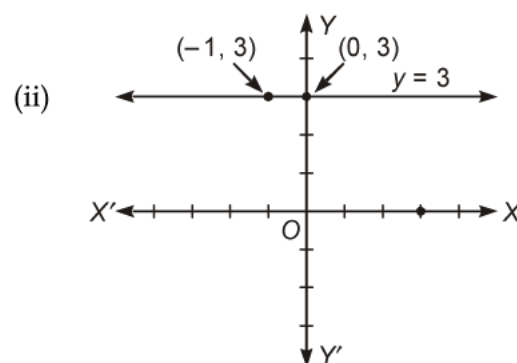
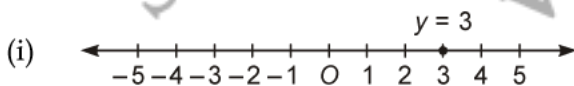
S9. $x - 2y = 0.$

S10. 7.

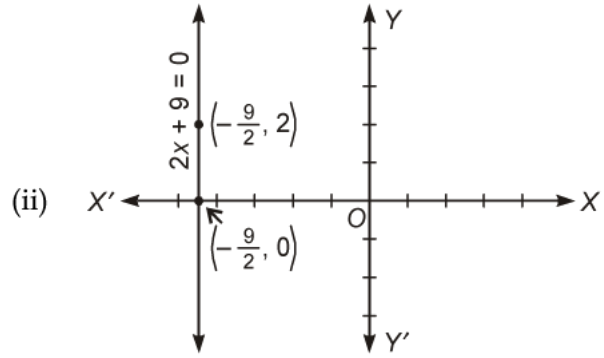
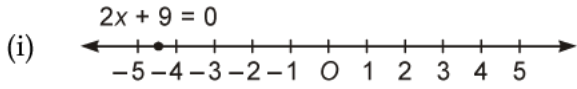
S11. $7x - y = 0$ and $x + y = 16$; infinity many [Through a point infinitely many lines can be drawn].

S12. $\frac{5}{3}.$

S13.



S14.



S15. $y - 2x = 0, (y = 2x)$

S16. $y = 2x + 4$

S17. $y = 2x - 4$

S18. $2x + 3y - 4.37 = 0$ $a = 2, b = 3, c = -4.37$

S19. $x - \sqrt{3}y - 4 = 0$ $a = 1, b = -\sqrt{3}, c = -4.$

S20. $5x - 3y - 4 = 0$ $a = 5, b = -3, c = -4.$

S21. $2x - y + 0 = 0$ $a = 2, b = -1, c = 0.$

S22. $(0, 4), (3, 0).$

S23. $(0, 0), (1, -\frac{2}{5}).$

S24. $(0, -\frac{4}{3}), (1, -\frac{4}{3}).$

S25. $(0, 7), (1, 5), (2, 3), (4, -1).$

S26. $(1, 9 - \pi), (0, 9), (-1, 9 + \pi), (\frac{9}{\pi}, 0).$

S27. $(0, 0), (4, 1), (-4, 1), (2, \frac{1}{2}).$

S28. (i) No.

(ii) No.

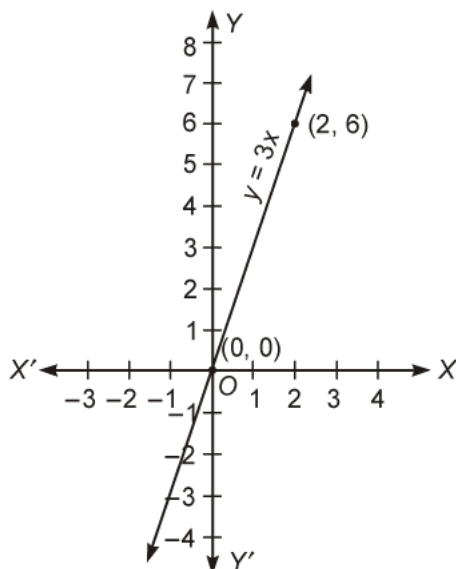
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S29. $y = Kx$, where K is a constant.

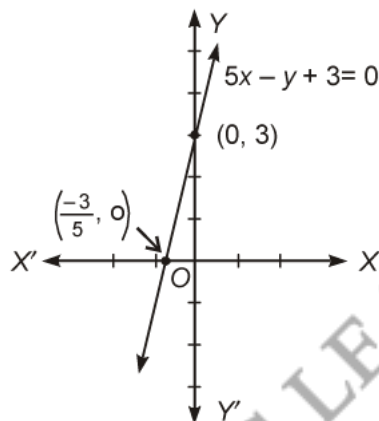
Let us take,

$$k = 3$$

i.e., we draw the line representing $y = 3x$.



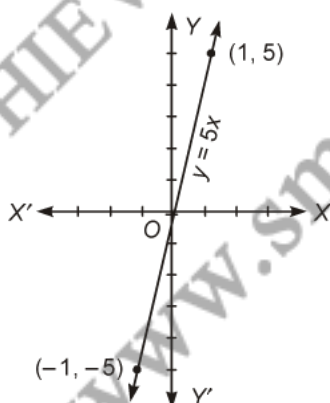
S30. $5x - y + 3 = 0$.



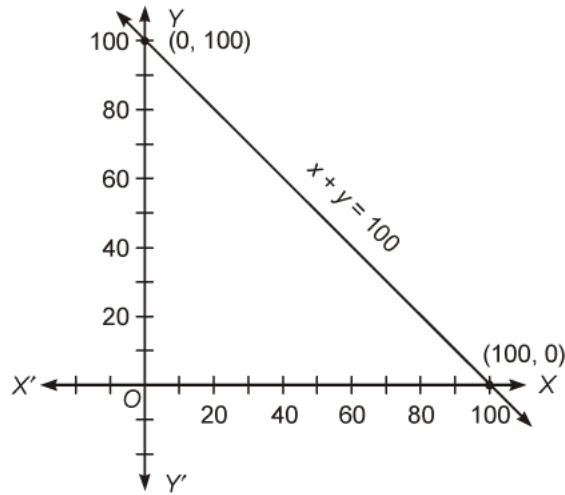
S31. Supposing x is the distance and y is the work done. Therefore according to the problem the equation will be $y = 5x$.

(i) 10 units

(ii) 0 unit



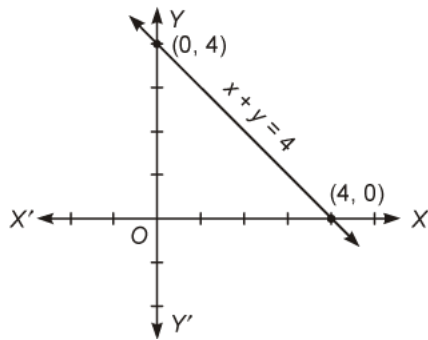
S32. $x + y = 100$



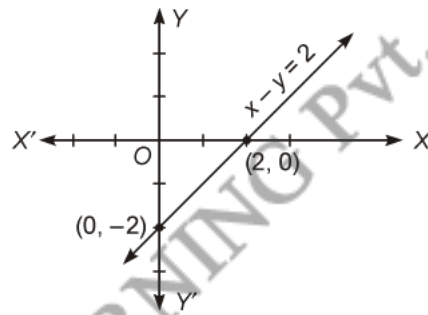
S33. (i) $2x + 3y - 9.35 = 0$; $a = 2, b = 3, c = -9.35$ (ii) $2x + 5y + 0 = 0$; $a = 2, b = 5, c = 0$

S34. (i) No. (ii) No. (iii) Yes.

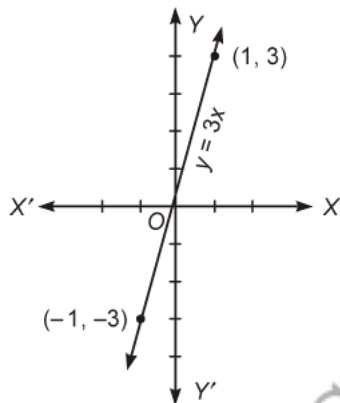
S35. (i)



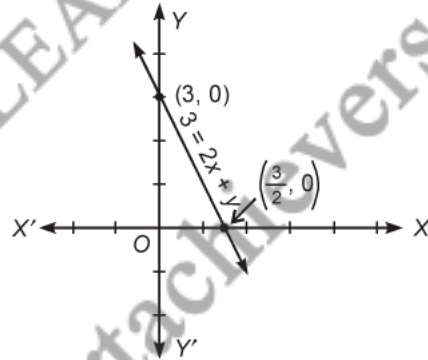
(ii)



S36. (i)



(ii)



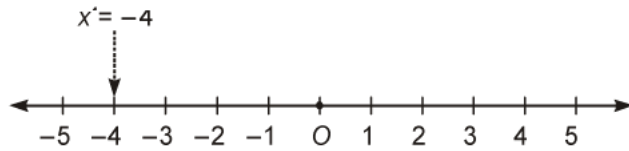
S37. (i) $1 \cdot x - 3y + 0 = 0$; $a = 1, b = -3, c = 0$ (ii) $-2x + 0 \cdot y + 5 = 0$; $a = -2, b = 0, c = 5$

S38. (i) $x - \frac{y}{5} - 10 = 0$; $a = 1, b = \frac{-1}{5}, c = -10$ (ii) $3x + 0 \cdot y + 2 = 0$; $a = 3, b = 0, c = 2$

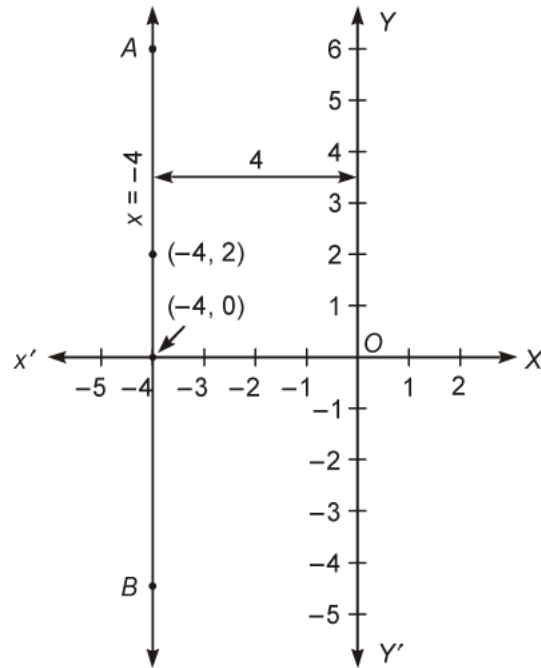
S39. (i) $-2x + 3y - 6 = 0$; $a = -2, b = 3, c = -6$ (ii) $0 \cdot x + 1 \cdot y - 2 = 0$; $a = 0, b = 1, c = -2$

S40. For figure (a), $x + y = 0$ and For figure (b), $y = -x + 2$.

S41. (i)



(ii)



S42. (i) See adjacent figure.

(ii) 86°F .

(iii) 35°C .

(iv) 32°F , -17.8°C (Approximately).

(v) Yes, -40° (both in $^{\circ}\text{F}$ and $^{\circ}\text{C}$).

