**Important Questions for Class 9 Maths Chapter 4:** Linear Equations in Two Variables introduces the concept of equations involving two variables and how they can be represented graphically. Important topics include the general form of linear equations (ax + by + c = 0), solutions of linear equations, plotting graphs, and finding the x- and y-intercepts.

Key questions often focus on solving equations, verifying solutions, and graphing lines on a coordinate plane. Students are also expected to understand the relationship between coefficients and the slope of the line and parallel and intersecting lines.

# Important Questions for Class 9 Maths Chapter 4 Overview

Chapter 4 of Class 9 Maths, Linear Equations in Two Variables, is crucial for building a strong foundation in algebra and graphing. It introduces linear equations involving two variables, which form the basis for understanding higher-level concepts like coordinate geometry, simultaneous equations, and calculus in advanced classes. This chapter covers important concepts like the general form of linear equations, solutions of equations, plotting them on a graph, and interpreting their graphical representations.

Students learn how to find the x- and y-intercepts, and how the coefficients affect the slope and position of lines. Understanding this chapter is key for solving problems related to real-life situations, such as determining the relationship between quantities and predicting outcomes, making it a highly important chapter.

# Important Questions for Class 9 Maths Chapter 4 Linear Equations in Two Variables

Below is the Important Questions for Class 9 Maths Chapter 4 Linear Equations in Two Variables -

**Question 1: Define the following linear equations in the form ax + by + c = 0 and show the values of a, b and c in every individual case:**

**(i) $x - y/5 - 10 = 0$**

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

**(iii) $y - 2 = 0$**

**Answer 1:**

(i) The equation x-y/5-10 = 0

(1)x + (-1/5) y + (-10) = 0

Directly compare the above equation with ax + by + c = 0

Therefore, we get;

a = 1

b = -⅕

c = -10

(ii) –2x + 3y = 6

Re-arranging the provided equation, we obtain,

–2x + 3y – 6 = 0

The required equation –2x + 3y – 6 = 0 can be written as,

(–2)x + 3y +(– 6) = 0

Directly comparing (–2)x + 3y +(– 6) = 0 with ax + by + c = 0

We obtain a = –2

b = 3

c = -6

(iii) y – 2 = 0

y – 2 = 0

The required equation y – 2 = 0 can be written as,

0x + 1y + (–2) = 0

Directly comparing 0x + 1y + (–2) = 0 with ax + by + c = 0

We obtain a = 0

b = 1

c = –2

**Question 2: The price of a notebook is twice the cost of a pen. Note a linear equation in two variables to illustrate this statement.**

**(Taking the price of a notebook to be ₹ x and that of a pen to be ₹ y)**

**Answer 2:** Let the price of one notebook be = ₹ x

Let the price of one pen be = ₹ y

As per the question,

The price of one notebook is twice the cost of one pen.

i.e., the price of one notebook = 2×price of a pen

$x = 2 \times y$

$x = 2y$

$x-2y = 0$

$x-2y = 0$ is the required linear equation in two variables to illustrate the statement, ‘The price of one given notebook is twice the cost of a pen.

**Question 3: Give the geometric representations of 2x + 9 = 0 as an equation**

**(i) in one variable**

**(ii) in two variables**

**Answer 3:**

(i) $2x + 9 = 0$

We have, $2x + 9 = 0$

$2x = -9$

$x = -9/2$

which is the required linear equation in one variable, that is, x only.

Therefore, $x = -9/2$ is a unique solution on the number line as shown below:

(ii) $2x + 9 = 0$

We can write $2x + 9 = 0$ in the two variables as $2x + 0, y + 9 = 0$

or $x = -9-0.y/2$

∴ When y = 1, $x = -9-0.(1)/2 = -9/2$

y=2 , $x = -9-0.(2)/2 = -9/2$

y = 3, $x = -9-0.(3)/2 = -9/2$

Therefore, we obtain the following table:

| | | | |
|---|---|---|---|
| X | -9/2 | -9/2 | -9/2 |
| Y | 1 | 2 | 3 |

Now, plotting the ordered pairs (−9/2,3), (−9/2,3) and (−9/2,3) on graph paper and connecting them, we get a line PQ as the solution of 2x + 9 = 0.

**Question 4: Note four solutions individually for the following equations:**

**(i) 2x + y = 7**

**Answer 4:** For the four answers of 2x + y = 7, we replace different values for x and y

Let x = 0

Then,

2x + y = 7

(2×0)+y = 7

y = 7

(0,7)

Let x = 1

Now,

2x + y = 7

(2×1)+y = 7

2+y = 7

y = 7 – 2

y = 5

(1,5)

Let y = 1

Now,

2x + y = 7

2x+ 1 = 7

2x = 7 – 1

2x = 6

x = 3

(3,1)

Let x = 2

Now,

2x + y = 7

2(2)+y = 7

4+y = 7

y = 7 – 4

y = 3

(2,3)

The answers are (0, 7), (1,5), (3,1), (2,3)

**Question 5: The linear equation 2x -5y = 7 has**

**(A) A unique solution**

**(B) Two solutions**

**(C) Infinitely many solutions**

**Answer 5:** (C) Infinitely many solutions

Solution:

Linear equation: The equation of two variables which gives a straight line graph is called a linear equation.

Here the linear equation is $2x – 5y = 7$

Let $y = 0$, then the value of x is:

$2x – 5(0)=7$

$2x =7$

$x = 7/2$

Now, let $y = 1$, then the value of x is:

$2x – 5 (1) =7$

$2x -5 =7$

$2x = 7 + 5$

$2x =12$

$x = 12/2$

$x = 6$

Here for different values of y, we are getting different values of x

Therefore, the equation has infinitely many solutions

**Question 6: Represent the following linear equations in the form ax + by + c = 0 and show the required values of a, b and c in every case:**

**Answer 6:** (i) $x –(y/5)–10 = 0$

The required equation $x –(y/5)-10 = 0$ can be written as,

$1x+(-1/5)y +(–10) = 0$

Comparing the given equation $x+(-1/5)y+(–10) = 0$ with $ax+by+c = 0$

We obtain,

$a = 1$

$b = -(1/5)$

$c = -10$

(ii) $–2x+3y = 6$

$–2x+3y = 6$

Rearranging the equation, we obtain,

$–2x+3y–6 = 0$

The required equation $–2x+3y–6 = 0$ can be written as,

$(–2)x+3y+(– 6) = 0$

Comparing the given equation $(–2)x+3y+(–6) = 0$ with $ax+by+c = 0$

We obtain $a = –2$

$b = 3$

$c =-6$

(iii) $x = 3y$

$x = 3y$

Rearranging the equation, we obtain,

$x-3y = 0$

The required equation $x-3y=0$ can be written as,

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

Comparing the given equation $1x+(-3)y+(0)c = 0$ with $ax+by+c = 0$

We obtain $a = 1$

$b = -3$

$c =0$

(iv) $2x = –5y$

$2x = –5y$

Rearranging the equation, we obtain,

$2x+5y = 0$

The required equation $2x+5y = 0$ can be written as,

$2x+5y+0 = 0$

Comparing the given equation $2x+5y+0= 0$ with $ax+by+c = 0$

We obtain $a = 2$

$b = 5$

$c = 0$

(v) $3x+2 = 0$

$3x+2 = 0$

The required equation $3x+2 = 0$ can be written as,

$3x+0y+2 = 0$

Comparing the given equation $3x+0+2= 0$ with $ax+by+c = 0$

We obtain $a = 3$

$b = 0$

$c = 2$

(vi) $y–2 = 0$

$y–2 = 0$

The required equation $y–2 = 0$ can be written as,

$0x+1y+(–2) = 0$

Comparing the given equation $0x+1y+(–2) = 0$ with $ax+by+c = 0$

We obtain $a = 0$

$b = 1$

$c = –2$

(vii) $5 = 2x$

$5 = 2x$

Rearranging the equation, we obtain,

$2x = 5$

i.e., $2x–5 = 0$

The required equation $2x–5 = 0$ can be written as,

$2x+0y–5 = 0$

Comparing the given equation $2x+0y–5 = 0$ with $ax+by+c = 0$

We obtain $a = 2$

$b = 0$

$c = -5$

**Question 7: Note four solutions individually for the following equations:**

**$\pi x + y = 9$**

**Answer 7:** For the four answers of $\pi x + y = 9$, we replace other values for x and y

Let $x = 0$

Now,

$\pi x + y = 9$

$(\pi \times 0)+y = 9$

$y = 9$

(0,9)

Let $x = 1$

Now,

$\pi x + y = 9$

$(\pi\times1)+y = 9$

$\pi+y = 9$

$y = 9-\pi$

$(1, 9-\pi)$

Let $y = 0$

Now,

$\pi x + y = 9$

$\pi x + 0 = 9$

$\pi x = 9$

$x = 9/\pi$

$(9/\pi, 0)$

Let $x = -1$

Now,

Put $x=2$, we have

$\pi x + y = 9$

$\pi(2) + y = 9$

$y = 9 - 2\pi$

The answers are $(0,9)$, $(1,9-\pi)$,$(9/\pi,0)$,$(2,9 - 2\pi)$

**Question 8: Find out the value of k, if x = 2, y = 1 is a given solution of the equation 2x + 3y = k.**

**Answer 8:** The provided equation is

$2x + 3y = k$

As per the given question, $x = 2$ and $y = 1$.

Then, Replacing the values of x and y in the equation $2x + 3y = k$,

We get,

$\Rightarrow (2 \times 2) + (3 \times 1) = k$

$\Rightarrow 4+3 = k$

⇒7 = k

⇒k = 7

The required value of k, if x = 2, y = 1 is a given solution of the equation 2x + 3y = k, is 7.

**Question 9: Establish that the required points A (1, 2), B ( – 1, – 16) and C (0, – 7) lie on the graph of the required linear equation y = 9x – 7.**

**Answer 9:** We include the equation,

y = 9x – 7

For A (1, 2),

Replacing (x,y) = (1, 2),

We obtain,

2 = 9(1) – 7

2 = 9 – 7

2 = 2

For B (–1, –16),

Replacing (x,y) = (–1, –16),

We get,

–16 = 9(–1) – 7

-16 = – 9 – 7

-16 = – 16

For C (0, –7),

Replacing (x,y) = (0, –7),

We obtain,

– 7 = 9(0) – 7

-7 = 0 – 7

-7 = – 7

Therefore, the points A (1, 2), B (–1, –16) and C (0, –7) satisfy the line y = 9x – 7.

Therefore, A (1, 2), B (–1, –16) and C (0, –7) are answers to the linear equation y = 9x – 7

Thus, points A (1, 2), B (–1, –16), and C (0, –7) lie on the graph of the linear equation y = 9x – 7.

**Question 10: Note the linear equation such that every point on its graph has a coordinate 3 times its abscissa.**

**Answer 10:**

As per the question,

A given linear equation such that every point on its graph has a coordinate(y) which is 3 times its

abscissa(x).

So we obtain

⇒ y = 3x.

Therefore, y = 3x is the required linear equation.

**Question 11: Illustrate the graph of the given linear equation 3x + 4y = 6. At what points does the graph cut the X and Y-axis?**

**Answer 11:** Given the equation,

3x + 4y = 6.

We need at least 2 points on the graph to illustrate the graph of this equation,

Therefore, the points the graph cuts

(i) x-axis

The given point is on the x-axis. We have y = 0.

Replacing y = 0 in the equation, 3x + 4y = 6,

We get,

3x + 4×0 = 6

⇒ 3x = 6

⇒ x = 2

Therefore, the point at which the graph cuts the x-axis = (2, 0).

(ii) y-axis

Since the point is on the y-axis, we have x = 0.

Replacing x = 0 in the equation, 3x + 4y = 6,

We obtain,

3×0 + 4y = 6

⇒ 4y = 6

⇒ y = 6/4

⇒ y = 3/2

⇒ y = 1.5

Thus, the point at which the graph cuts the x-axis = (0, 1.5).

By plotting the points (0, 1.5) and (2, 0) on the graph.

**Question 12: Show that the required points A (1, 2), B ( – 1, – 16) and C (0, – 7) lie on the given graph of the linear equation y = 9x – 7.**

**Answer 12:** We have the given equation,

y = 9x – 7

For A (1, 2),

Substitute the values of (x,y) = (1, 2),

We obtain,

2 = 9 (1) – 7 = 9 – 7 = 2

For B (–1, –16),

Substitute the values of (x,y) = (–1, –16),

We obtain,

–16 = 9(–1) – 7 = – 9 – 7 = – 16

For C (0, –7),

Substitute the values of (x,y) = (0, –7),

We obtain,

$-7 = 9(0) - 7 = 0 - 7 = -7$

Thus, we locate that points A (1, 2), B (–1, –16) and C (0, –7) satisfy the line $y = 9x - 7$.

Thus, A (1, 2), B (–1, –16), and C (0, –7) are required solutions of the linear equation $y = 9x - 7$

Hence, the given points A (1, 2), B (–1, –16) and C (0, –7) lie on the graph of the required linear equation $y = 9x - 7$.

## Benefits of Solving Important Questions for Class 9 Maths Chapter 4

Below we have provided some of the benefits of solving Important Questions for Class 9 Maths Chapter 4 Linear Equations in Two Variables -

**Strengthens Conceptual Understanding:** Reinforces key concepts like linear equations, graphing, and slope.

**Enhances Problem-Solving Skills:** Builds proficiency in solving different types of linear equation problems.

**Improves Graphing Techniques:** Boosts the ability to plot and interpret linear equations on a coordinate plane.

**Exam-Oriented Practice:** Familiarizes students with the format and difficulty of exam questions.

**Boosts Confidence:** Regular practice reduces errors and increases confidence in tackling similar problems.

**Prepares for Higher Studies:** Lays a solid foundation for more advanced algebra and geometry concepts.