Important Questions for Class 11 Maths Chapter 6: Important Questions for Class 11 Maths Chapter 6 Linear Inequalities cover essential concepts that are fundamental for understanding inequalities in both one and two variables. This chapter introduces students to methods of solving linear inequalities and representing their solutions on a number line and in the coordinate plane.

Practicing these questions helps students build confidence and improves their skills in analyzing inequalities which are crucial not only for Class 11 exams but also for future studies in mathematics and economics. Solving these questions allows students to strengthen their problem-solving abilities and prepares them well for exams and higher-level mathematics.

Important Questions for Class 11 Maths Chapter 6 Overview

Important Questions for Class 11 Maths Chapter 6 Linear Inequalities have been created by the subject experts at Physics Wallah to provide a detailed overview of this critical topic.

By practicing these questions students can reinforce their grasp of core concepts, such as inequality symbols, solution sets and methods for representing inequalities graphically.

Important Questions for Class 11 Maths Chapter 6 PDF

Important Questions for Class 11 Maths Chapter 6 Linear Inequalities PDF provide a valuable resource for students aiming to strengthen their understanding of inequalities. This PDF is created by subject experts, includes key questions that cover all essential topics in Chapter 6, such as solving inequalities in one and two variables, graphing solution sets and interpreting inequality symbols.

To access and start practicing with this helpful study material download the PDF from the link provided below.

Important Questions for Class 11 Maths Chapter 6 PDF

Important Questions for Class 11 Maths Chapter 6 Linear Inequalities

Here is the Important Questions for Class 11 Maths Chapter 6 Linear Inequalities-

Question 1:

Solve 3x+8>2, when

(i) x is an integer

(ii) x is a real number

Solution:

Given Linear inequality: 3x+8>2

The given inequality can also be written as:

3x+8 -8 > 2 -8 …(1)

In the above inequality, -8 is multiplied on both the sides, as it does not change the definition of the given expression.

Now, simplify the expression (1)

⇒ 3x > -6

Now, both the sides, divide it by 3

⇒ 3x/3 > -6/3

⇒ x > -2

(i) x is an integer

Hence, the integers greater than -2 are -1,0,1,2,…etc

Thus, when x is an integer, the solutions of the given inequality are -1,0,1,2,…

Hence, the solution set for the given linear inequality is {-1,0,1,2,…}

(ii) x is a real number

If x is a real number, the solutions of the given inequality are all the real numbers, which

are greater than 2.

Therefore, in the case of x is a real number, the solution set is (-2, ∞)

Question 2:

The cost and revenue functions of a product are given by C(x) = 20 x + 4000 and R(x) = 60x + 2000, respectively, where x is the number of items produced and sold. How many items must be sold to realise some profit?

Solution:

Given that,

Cost, C(x) = 20 x + 4000

Revenue, R(x) = 60x + 2000

We know that, profit = Revenue – Cost

Now, subsitute the given data in the above formula,

Profit = R(x) – C(x)

Profit = (60x + 2000)-(20 x + 4000)

Now, simplify it:

Profit = 60x + 2000 -20x -4000

Profit = 40x – 2000

To earn some profit, 40x – 2000 > 0

⇒40x > 2000

⇒ x>2000/40

⇒ x > 50

Thus, the manufacturer should sell more than 50 items to realise some profit.

Question 3:

Solve the given linear inequalities 3x-2 < 2x+1 and show the graph of the solution in the number line.
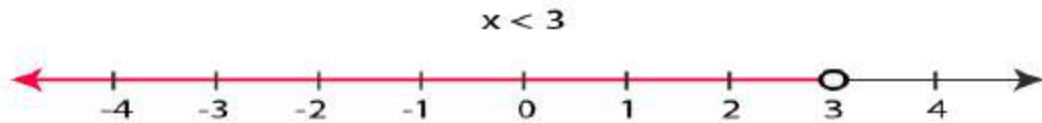
Solution:

Given linear inequality: 3x-2 < 2x+1

Bring the x terms on one side and constant terms on another side

⇒3x-2x < 1+2

⇒ x < 3

Therefore, the graphical representation for the solution of a linear inequality in number line is as follows:

$$x < 3$$

Question 4:

Ravi scored 70 and 75 marks in the first two-unit test. Calculate the minimum marks he should get in the third test to have an average of at least 60 marks.

Solution:

Assume that x be the marks obtained by Ravi in the third unit test.

It is given that the student should have an average of at least 60 marks.

From the given information, we can write the linear inequality as:

$(70+75+x)/3 \geq 60$

Now, simplify the expression:

$\Rightarrow (145 +x) \geq 180$

$\Rightarrow x \geq 180 -145$

$\Rightarrow x \geq 35$

Hence, the student should obtain a minimum of 35 marks to have an average of at least 60 marks.

Benefits of Solving Important Questions for Class 11 Maths Chapter 6

Here are the benefits of solving Important Questions for Class 11 Maths Chapter 6: Linear Inequalities:

Strengthens Conceptual Understanding: Regular practice with these questions helps students grasp fundamental concepts of inequalities, including solution sets and graphing techniques.

Improves Problem-Solving Skills: These questions provide a range of scenarios, enhancing analytical skills and improving accuracy in solving inequalities.

Prepares for Exams: Familiarizes students with types of questions that may appear on exams, making them better prepared and boosting confidence.

Builds Graphing Skills: Teaches students how to represent solutions on number lines and coordinate planes, which is crucial for visualizing inequalities.

Develops Logical Thinking: Working on inequalities helps students think critically about relationships between values, fostering logical reasoning skills useful in math and other subjects.

Boosts Readiness for Advanced Math: A strong understanding of inequalities prepares students for more complex topics in calculus, economics, and science.