

## **Graphing Inequalities Worksheet Questions and Answers PDF**

Graphing Inequalities Worksheet Questions And Answers PDF

Disclaimer: The graphing inequalities worksheet questions and answers pdf was generated with the help of StudyBlaze AI. Please be aware that AI can make mistakes. Please consult your teacher if you're unsure about your solution or think there might have been a mistake. Or reach out directly to the StudyBlaze team at max@studyblaze.io.

## Part 1: Building a Foundation

#### Which symbol represents "greater than"?

Hint: Think about the symbols used in inequalities.

- <</p>
   > ✓
   ≤
   ≥
- The correct symbol for 'greater than' is '>'.

#### Which of the following are inequality symbols?

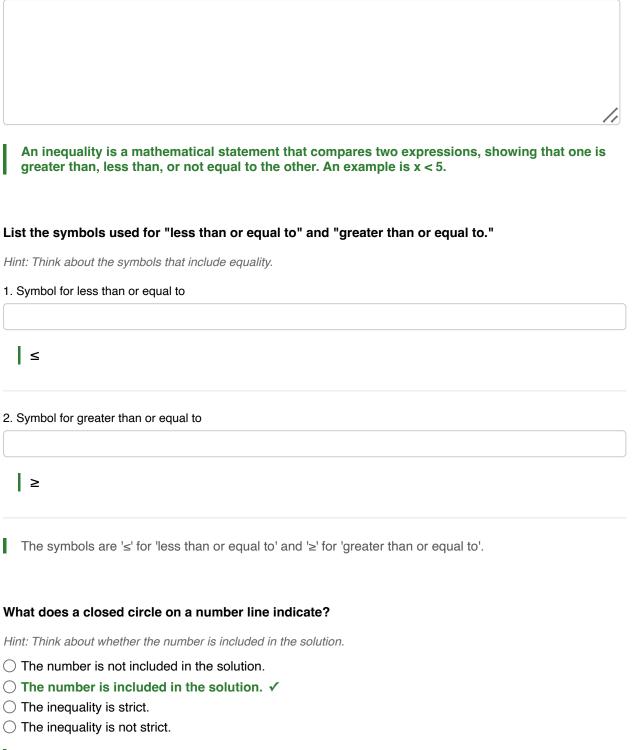
Hint: Identify the symbols that represent inequalities.

- □ = □ > √ □ ≤ √ □ ≠ √
- The correct inequality symbols are '>', ' $\leq$ ', and ' $\neq$ '.

#### Explain what an inequality is and provide an example.

Hint: Consider how inequalities compare two values.





A closed circle indicates that the number is included in the solution.



## Part 2: Application and Analysis

#### If you multiply both sides of the inequality -3x < 9 by -1, what is the resulting inequality?

Hint: Remember to reverse the inequality sign when multiplying by a negative.

○ x > -3 ✓
○ x < -3</p>
○ x < 3</p>
○ x < 3</p>

The resulting inequality is x > -3.

#### Which of the following are solutions to the inequality $2x + 3 \le 7$ ?

Hint: Substitute the values into the inequality to check.

 $x = 1 \checkmark$   $x = 2 \checkmark$   $x = 0 \checkmark$  x = -1

The solutions are x = 1, x = 2, and x = 0.

#### Graph the inequality $y \le 2x + 1$ on a coordinate plane and describe the steps you took.

Hint: Consider how to plot the line and shade the appropriate region.

To graph  $y \le 2x + 1$ , plot the line y = 2x + 1 as a solid line and shade below it.

#### When graphING the inequality y > -x + 4, what type of line should be used?

Hint: Think about whether the boundary line is included in the solution.



○ Solid line

- Dashed line ✓
- O Dotted line
- O Thick line

A dashed line should be used for the inequality y > -x + 4.

#### Which points satisfy the inequality y < 3x - 2?

Hint: Test each point in the inequality to see if it holds true.

(1, 1) ✓
(0, -3) ✓
(2, 5)
(-1, -5)

The points (1, 1) and (0, -3) satisfy the inequality y < 3x - 2.

Explain how you would determine which region to shade when graphING the inequality  $y \ge x - 1$ .

Hint: Consider the line and the direction of the inequality.

To determine the shading region for  $y \ge x - 1$ , shade above the line y = x - 1 since the inequality includes equality.

### Part 3: Evaluation and Creation

Which statement best describes the solution to the system of inequalities y > 2x and y < -x + 3?

Hint: Think about how the two regions interact.

- $\bigcirc$  The solution is the intersection of the two regions.  $\checkmark$
- The solution is the union of the two regions.



 $\bigcirc$  There is no solution.

 $\bigcirc$  The solution is a single point.

The solution is the intersection of the two regions.

#### Which of the following scenarios can be modeled by an inequality?

Hint: Consider situations that involve limits or thresholds.

- ☐ A budget limit of \$100. ✓
- ☐ A minimum age requirement of 18 years. ✓
- An exact temperature of 72°F.
- ☐ A speed limit of 65 mph. ✓

The scenarios that can be modeled by an inequality are a budget limit of \$100, a minimum age requirement of 18 years, and a speed limit of 65 mph.

# Create a real-world problem that can be solved using a system of inequalities and describe how you would solve it.

Hint: Think about constraints and how they can be represented mathematically.

An example could be planning a budget for a party with constraints on food and entertainment costs, which can be represented as a system of inequalities.