

Inequalities On A Graph Worksheet Answer Key PDF

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Part 1: Building a Foundation

Which symbol represents a strict inequality?

undefined. \geq

undefined. \leq

undefined. $>$ ✓

undefined. $=$

The correct answer is the symbol that indicates a strict relationship without equality.

Which of the following are non-strict inequalities? (Select all that apply)

undefined. $>$

undefined. $<$

undefined. \geq ✓

undefined. \leq ✓

Non-strict inequalities include symbols that allow for equality.

Explain the difference between a strict inequality and a non-strict inequality.

A strict inequality does not include equality, while a non-strict inequality does.

List the symbols used for inequalities and provide a brief description of each.

1. What does ' $>$ ' mean?

Greater than.

2. What does ' $<$ ' mean?

Less than.

3. What does ' \geq ' mean?

Greater than or equal to.

4. What does ' \leq ' mean?

Less than or equal to.

Common symbols include $>$, $<$, \geq , and \leq , each representing different relationships.

On a number line, how is the inequality $x > 3$ represented?

undefined. A closed circle on 3 with shading to the right

undefined. An open circle on 3 with shading to the right ✓

undefined. A closed circle on 3 with shading to the left

undefined. An open circle on 3 with shading to the left

The correct representation involves an open circle and shading to the right.

Part 2: Application and Analysis

If $3x + 5 > 11$, what is the solution for x ?

undefined. $x > 2$ ✓

undefined. $x < 2$

undefined. $x > -2$

undefined. $x < -2$

The solution involves isolating x to find its range.

Consider the inequality $2y - 4 \leq 8$. Which of the following are solutions for y ? (Select all that apply)

undefined. $y = 5$

undefined. $y = 6$ ✓

undefined. $y = 7$ ✓

undefined. $y = 4$ ✓

Identify values of y that satisfy the inequality after solving it.

A company wants to produce at least 100 units of a product. Write an inequality to represent this situation and solve for the minimum number of units needed if each batch produces 20 units.

The inequality can be expressed as $20x \geq 100$, where x is the number of batches.

Which graph correctly represents the system of inequalities $y > 2x + 1$ and $y \leq -x + 4$?

undefined. Graph A

undefined. Graph B ✓

undefined. Graph C

undefined. Graph D

The correct graph will show the regions defined by both inequalities.

Analyze the following system of inequalities: $y < 3x - 2$ and $y \geq x + 1$. Which points are solutions to this system? (Select all that apply)

undefined. (1, 2) ✓

undefined. (0, 0)

undefined. (2, 5) ✓

undefined. (3, 7)

Identify points that satisfy both inequalities in the system.

Explain how you would determine the feasible region for a system of inequalities on a graph.

The feasible region is determined by graphically representing each inequality and finding the intersection.

Part 3: Evaluation and Creation

Which of the following scenarios can be best modeled by the inequality $x + y \leq 10$?

undefined. A budget constraint where x and y are expenses and the total budget is \$10. ✓

undefined. A temperature range where x is the minimum and y is the maximum temperature.

undefined. A time constraint where x is hours worked and y is hours of leisure.

undefined. A distance constraint where x is miles traveled by car and y is miles traveled by bike.

The correct scenario involves a constraint on the total of two quantities.

Evaluate the following statements about inequalities in real-world contexts. Which are true? (Select all that apply)

undefined. Inequalities can represent constraints in optimization problems. ✓

undefined. Inequalities are only used in mathematical contexts, not real-world scenarios.

undefined. Inequalities can help in decision-making processes. ✓

undefined. Inequalities cannot be used to model growth trends.

True statements will reflect the practical use of inequalities in decision-making.

Create a real-world problem that can be modeled using a system of inequalities. Describe the problem and provide the inequalities that represent it.

The problem should involve multiple constraints that can be expressed as inequalities.