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Graphing Inequalities Worksheet

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Part 1: Building a Foundation

Which symbol represents "greater than"?

Hint: Think about the symbols used in inequalities.

○ <
○ >
○ ≤
○ ≥

Which of the following are inequality symbols?

Hint: Identify the symbols that represent inequalities.

☐ =
☐ >
☐ ≤
☐ ≠

Explain what an inequality is and provide an example.

Hint: Consider how inequalities compare two values.

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List the symbols used for "less than or equal to" and "greater than or equal to."

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Hint: Think about the symbols that include equality.

1. Symbol for less than or equal to

[   ]

2. Symbol for greater than or equal to

[   ]

What does a closed circle on a number line indicate?

Hint: Think about whether the number is included in the solution.

○ The number is not included in the solution.
○ The number is included in the solution.
○ The inequality is strict.
○ The inequality is not strict.

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
○ x > 3
○ x < 3

Which of the following are solutions to the inequality 2x + 3 ≤ 7?

Hint: Substitute the values into the inequality to check.

☐ x = 1
☐ x = 2
☐ x = 0
☐ x = -1

Graph the inequality y ≤ 2x + 1 on a coordinate plane and describe the steps you took.

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

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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
○ Dotted line
○ Thick line

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)

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

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

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Part 3: Evaluation and Creation

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

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Hint: Think about how the two regions interact.

◯ The solution is the intersection of the two regions.

◯ The solution is the union of the two regions.

◯ There is no solution.

◯ The solution is a single point.

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.

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.

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