Inequalities On A Graph Worksheet Questions and Answers PDF

Inequalities On A Graph Worksheet Questions And Answers PDF

Disclaimer: The inequalities on a graph 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 a strict inequality?

Hint: Think about the symbols used in inequalities.

- ◯ ≥
- ◯ ≤
- ◯ **> ✓**
- ◯ =

> 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)

Hint: Consider the symbols that allow for equality.

- ☐ >
- ☐ <
- ☐ **≥ ✓**
- ☐ **≤ ✓**

> Non-strict inequalities include symbols that allow for equality.

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

Hint: Consider how each type of inequality treats equality.

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.

Hint: Think about the common symbols and their meanings.

1. What does '>' mean?

Greater than.

2. What does '<' mean?

Less than.

3. What does '≥' mean?

Greater than or equal to.

4. What does '≤' mean?

Less than or equal to.

Common symbols include >, <, ≥, and ≤, each representing different relationships.

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

Hint: Visualize how the number line would look for this inequality.

- ◯ A closed circle on 3 with shading to the right
- ◯ **An open circle on 3 with shading to the right ✓**
- ◯ A closed circle on 3 with shading to the left
- ◯ 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?

Hint: Solve the inequality step by step.

- ◯ **x > 2 ✓**
- ◯ x < 2
- ◯ x > -2
- ◯ x < -2

> The solution involves isolating x to find its range.

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

Hint: Rearrange the inequality to find possible values for y.

- ☐ y = 5
- ☐ **y = 6 ✓**
- ☐ **y = 7 ✓**
- ☐ **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.

Hint: Think about how to express the total production in terms of batches.

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

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

Hint: Consider the slopes and intercepts of the lines.

- ◯ Graph A
- ◯ **Graph B ✓**
- ◯ Graph C
- ◯ Graph D

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

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

Hint: Evaluate each point against the inequalities.

- ☐ **(1, 2) ✓**
- ☐ (0, 0)
- ☐ **(2, 5) ✓**
- ☐ (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.

Hint: Consider the steps involved in graphically representing inequalities.

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 ≤ 10?

Hint: Think about constraints that involve two variables.

- ◯ **A budget constraint where x and y are expenses and the total budget is $10. ✓**
- ◯ A temperature range where x is the minimum and y is the maximum temperature.
- ◯ A time constraint where x is hours worked and y is hours of leisure.
- ◯ 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)

Hint: Consider the applications of inequalities in various fields.

- ☐ **Inequalities can represent constraints in optimization problems. ✓**
- ☐ Inequalities are only used in mathematical contexts, not real-world scenarios.
- ☐ **Inequalities can help in decision-making processes. ✓**
- ☐ 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.

Hint: Think about a scenario involving constraints and multiple variables.

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