Inequality Word Problems Worksheet Questions and Answers PDF

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Part 1: Building a Foundation

Which symbol represents "greater than or equal to"?

Hint: Think about the symbols used in inequalities.

- ◯ <
- ◯ >
- ◯ ≤
- ◯ **≥ ✓**

> The correct symbol for 'greater than or equal to' is '≥'.

Which of the following are true about inequalities? (Select all that apply)

Hint: Consider the properties and characteristics of inequalities.

- ☐ **They can be represented on a number line. ✓**
- ☐ They always have a single solution.
- ☐ **They use symbols like < and >. ✓**
- ☐ They represent relationships where two expressions are equal.

> Inequalities can be represented on a number line and use symbols like < and >.

Define what an inequality is and provide an example using the symbol "<".

Hint: Think about how inequalities express relationships between values.

An inequality is a mathematical statement that shows the relationship between two expressions that are not necessarily equal. For example, x < 5 means x is less than 5.

List the four inequality symbols and describe what each one means.

Hint: Consider the common symbols used in inequalities.

1. What does < mean?

Less than

2. What does > mean?

Greater than

3. What does ≤ mean?

Less than or equal to

4. What does ≥ mean?

Greater than or equal to

> The four inequality symbols are: 1) < (less than), 2) > (greater than), 3) ≤ (less than or equal to), 4) ≥ (greater than or equal to).

Part 2: Understanding and Interpretation

If a problem states "at least 10," which inequality symbol should be used?

Hint: Consider what 'at least' implies about the value.

- ◯ <
- ◯ >
- ◯ ≤
- ◯ **≥ ✓**

> The correct symbol to use is '≥', indicating at least 10 or more.

Which of the following statements can be represented by the inequality x > 5? (Select all that apply)

Hint: Think about the meaning of the inequality.

- ☐ **x is more than 5. ✓**
- ☐ x is at least 5.
- ☐ **x is greater than 5. ✓**
- ☐ x is fewer than 5.

> The statements that can be represented are: x is more than 5 and x is greater than 5.

Explain how you would graph the inequality x ≤ 3 on a number line.

Hint: Consider how to represent the boundary and the direction of the inequality.

To graph x ≤ 3, you would draw a closed circle on 3 and shade to the left to indicate all values less than or equal to 3.

Part 3: Application and Analysis

A store sells apples for $2 each. If you have $20, what is the maximum number of apples you can buy? Formulate the inequality.

Hint: Think about how to express the total cost in terms of the number of apples.

- ◯ 2x < 20
- ◯ **2x ≤ 20 ✓**
- ◯ 2x > 20
- ◯ 2x ≥ 20

The correct inequality is 2x ≤ 20, where x is the number of apples.

Which of the following inequalities correctly represents the statement: "The sum of a number and 7 is less than 15"? (Select all that apply)

Hint: Think about how to express the sum in terms of the variable.

- ☐ **x + 7 < 15 ✓**
- ☐ x + 7 ≤ 15
- ☐ x + 7 > 15
- ☐ x + 7 ≥ 15

The correct inequality is x + 7 < 15.

Create an inequality to represent the scenario: "A car rental company charges $50 per day. You have a budget of $300. How many days can you rent the car?"

Hint: Think about how to express the total cost in terms of the number of days.

The inequality would be $50x \leq 300$, where x is the number of days.

Which of the following best describes the solution set for the inequality $3x - 4 > 5$?

Hint: Consider how to isolate x in the inequality.

- ◯ **$x > 3$ ✓**
- ◯ $x < 3$
- ◯ $x > 9/3$
- ◯ $x < 9/3$

The correct description is $x > 3$.

Part 4: Evaluation and Creation

Which inequality best represents the scenario: "A basketball team needs to score more than 100 points to win the game"?

Hint: Think about what 'more than' implies.

- ◯ $x \geq 100$
- ◯ **$x > 100$ ✓**
- ◯ $x \leq 100$
- ◯ $x < 100$

The correct inequality is $x > 100$.

Evaluate the following inequalities and determine which have the same solution set as $x > 2$. (Select all that apply)

Hint: Consider the implications of each inequality.

- ☐ $x \geq 3$
- ☐ **$x > 1$ ✓**
- ☐ **$x \geq 2$ ✓**
- ☐ **$x > 2$ ✓**

The inequalities that have the same solution set are $x > 1$ and $x \geq 2$.

Create a real-world problem that can be solved using the inequality x + 5 ≤ 20. Explain the steps to solve it and interpret the solution.

Hint: Think about a scenario where a limit is imposed.

An example problem could be: 'You have a maximum of $20 to spend on snacks, and each snack costs $5. How many snacks can you buy?' The steps involve isolating x and interpreting the result.