LESSON MAKER PRO

Inequality Value Hunt

Find numbers that make each inequality true.

GRADE 7 · 7.PFA.4.g

7.PFA.4.g "Identify a numerical value(s) that is part of the solution set of a given one- or two-step linear inequality in one variable."

NAME _____ DATE _____

TEST THE INEQUALITY

A solution is a value that makes an inequality true. Undo addition or subtraction first, then undo multiplication or division. When you multiply or divide by a negative number, reverse the inequality sign.

WORKED EXAMPLE

Find one numerical value that is part of the solution set for $5x - 2 > 23$.

1. Add 2 to both sides: $5x > 25$.
2. Divide both sides by 5: $x > 5$.
3. Choose a value greater than 5, such as 24.

Answer: 24 is part of the solution set.

PRACTICE 6 problems

1 1. Which value is a solution to x + 6 > 14? A. 7 B. 8 C. 9

ANSWER _____

2 2. Which value is a solution to x - 9 <= -3? A. 6 B. 7 C. 8

ANSWER _____

3 3. Which value is a solution to 3x < 18? A. 4 B. 6 C. 8

ANSWER _____

4 4. Which value is a solution to x / 4 >= 3? A. 10 B. 11 C. 12

ANSWER _____

5 5. Which value is a solution to -3x > -18? A. 4 B. 6 C. 8

ANSWER _____

6 6. Which value is a solution to 4x + 1 <= 17? A. 4 B. 6 C. 8

ANSWER _____

APPLY IT Show your work

1 Maya has at most $30 to spend at a school event. An event pass costs $6, and each ride costs $3. Let x be the number of rides. Which number of rides is possible: 8, 9, or 10? Show your work.

WORK SPACE

ANSWER _____

2 In a gaming challenge, Luis has 9 points and earns 3 points per round. He wants at least 27 points. Let x be the number of rounds. Of 4, 6, and 8 rounds, identify all numbers that could work. Show your work.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Identify all values in the set {3, 4, 6, 8} that are solutions to $-4x + 10 > -14$. Explain why the inequality sign changes or does not change when you solve.

WORK SPACE AND ANSWER

ANSWER KEY

Inequality Value Hunt

GRADE 7 · 7.PFA.4.g

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	1. Which value is a solution to x + 6 > 14? A. 7 B. 8 C. 9	**9**
2	2. Which value is a solution to x - 9 <= -3? A. 6 B. 7 C. 8	**6**
3	3. Which value is a solution to 3x < 18? A. 4 B. 6 C. 8	**4**
4	4. Which value is a solution to x / 4 >= 3? A. 10 B. 11 C. 12	**12**
5	5. Which value is a solution to -3x > -18? A. 4 B. 6 C. 8	**4**
6	6. Which value is a solution to 4x + 1 <= 17? A. 4 B. 6 C. 8	**4**

PART 2 · APPLY IT

1. **8 rides** Write 6 + 3x <= 30. Subtract 6 and divide by 3 to get x <= 8, so 8 is possible.
2. **6 and 8 rounds** Write 9 + 3x >= 27. Subtract 9 and divide by 3 to get x >= 6, so 6 and 8 work.

CHALLENGE

3 and 4. Subtracting 10 gives -4x > -24. Dividing by -4 reverses the sign, so x < 6.

Accept any clear indication of the correct choice or value. For the challenge, accept an equivalent explanation that dividing by a negative reverses the inequality sign.