

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 _____

FIND A SOLUTION VALUE

A solution to an inequality is any value that makes the inequality true. Solve for x , then choose a number that is in the solution set. When you multiply or divide both sides by a negative number, reverse the inequality sign.

WORKED EXAMPLE

Find one value of x that makes $4x + 3 \leq 19$ true.

1. Subtract 3 from both sides: $4x \leq 16$.
2. Divide both sides by 4: $x \leq 4$.
3. Choose -1 because -1 is less than or equal to 4.

Answer: $x = -1$

PRACTICE 6 problems

- 1** Which value makes $x + 7 > 12$ true? 5, 6, or 0

ANSWER _____

- 2** Which value makes $5x \leq 30$ true? 6, 7, or 8

ANSWER _____

- 3** Which value makes $x/6 + 5 < 8$ true? 17, 18, or 20

ANSWER _____

- 4** Which value makes $7 - x > 1$ true? 5, 6, or 7

ANSWER _____

- 5** Which value makes $2x + 9 \geq 25$ true? 6, 7, or 8

ANSWER _____

- 6** Which value makes $55 - 9x \leq 10$ true? 0, 1, or 5

ANSWER _____

APPLY IT Show your work

- 1** A gaming club charges \$6 to enter and \$5 for each game you play. You have no more than \$36 to spend. What is the greatest whole number of games you can play?

WORK SPACE

ANSWER _____

- 2** A community food drive has collected 15 cans. Each donation pack adds 7 cans. The drive needs at least 50 cans. What is the least number of donation packs needed?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

The inequality $40 - 6x > 10$ has more than one whole-number solution. Name two whole-number solutions and explain why they work.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Which value makes $x + 7 > 12$ true? 5, 6, or 0	6
2	Which value makes $5x \leq 30$ true? 6, 7, or 8	6
3	Which value makes $x/6 + 5 < 8$ true? 17, 18, or 20	17
4	Which value makes $7 - x > 1$ true? 5, 6, or 7	5
5	Which value makes $2x + 9 \geq 25$ true? 6, 7, or 8	8
6	Which value makes $55 - 9x \leq 10$ true? 0, 1, or 5	5

PART 2 • APPLY IT

- 6 games** Write $6 + 5x \leq 36$. Solving gives $x \leq 6$, so 6 is the greatest whole-number value.
- 5 packs** Write $15 + 7x \geq 50$. Solving gives $x \geq 5$, so 5 is the least whole-number value.

CHALLENGE

0 and 1. Subtracting 40 and dividing by -6 gives $x < 5$, so both 0 and 1 are solutions.

Accept any equivalent solving work that identifies the listed value in each practice item. For the challenge, accept any two distinct whole numbers less than 5 with a correct explanation.