

Lesson 8-6 • Group 2

Reinforce Understanding

8.6 Small Group • Group 2

I can solve an inequality and graph its solution set on a number line, explain what each part stands for, and build one for a situation I have not seen before.

Worked model

Solve $x + 3 > 53$. The inverse of adding 3 is subtracting 3.

1. I subtract 3 from both sides: $x + 3 - 3 > 53 - 3$, so $x > 50$.
2. The symbol $>$ does not include 50, so I use an open circle at 50.
3. 'Greater than' shades right. Check: $x = 60$ gives $60 + 3 = 63 > 53$. True!

Practice

Complete each exercise. Show the reasoning that supports your answer.

1. Solve each inequality, describe the inverse operation, and describe the graph.

Complete the table. Show how you found each value.

Inequality	Inverse Operation	Solution	Graph Description
$x + 11 \geq 20$			
$x - 3 < 7$			
$x + 8 \leq 20$			

Show your work

2. Solve each inequality, then test if $x = 10$ is a solution.

Write the name of the correct group on each line.

Groups: $x = 10$ IS a solution $x = 10$ is NOT a solution

- _____ $x + 2 > 8$ ($x > 6$)
- _____ $x - 5 \geq 3$ ($x \geq 8$)
- _____ $x + 1 \leq 15$ ($x \leq 14$)
- _____ $x + 3 > 15$ ($x > 12$)
- _____ $x - 2 \geq 9$ ($x \geq 11$)
- _____ $x + 6 < 10$ ($x < 4$)

3. Final gate — describe the solution set. The vault rule is $x > 7$. What does the solution set mean?

Circle the letter of the best answer. Show how you know.

- A. All numbers greater than 7, like 8, 9, 10, ... (but NOT 7 itself)
- B. Only the number 7
- C. All numbers less than 7
- D. Every number, including 7

Show your work
