

# Reteaching 6-5

## Solving Inequalities by Adding and Subtracting

You can graph inequality solutions on a number line.

Inequality	Graph	How to Read the Graph
$x > 2$ <i>x is greater than 2</i>		An open dot at 2 shows that 2 is not included. All numbers greater than 2 are included.
$x < 2$ <i>x is less than 2</i>		An open dot at 2 shows that 2 is not included. All numbers less than 2 are included.
$x \geq 2$ <i>x is equal to or greater than 2</i>		A solid dot at 2 shows that 2 is included. All numbers greater than 2 are also included.
$x \leq 2$ <i>x is equal to or less than 2</i>		A solid dot at 2 shows that 2 is included. All numbers less than 2 are also included.

To help solve an inequality, you can subtract the same number from or add the same number to each side.

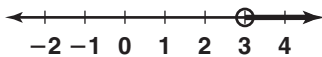
Solve:  $x + 5 > 8$ .

$$x + 5 > 8$$

$$x + 5 - 5 > 8 - 5 \quad \leftarrow \text{Subtract 5 from each side.}$$

$$x > 3 \quad \leftarrow \text{Simplify.}$$

Graph the solution:



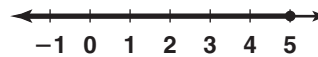
Solve:  $y - 4 \leq 1$ .

$$y - 4 \leq 1$$

$$y - 4 + 4 \leq 1 + 4 \quad \leftarrow \text{Add 4 to each side.}$$

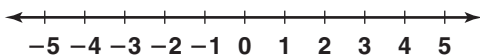
$$y \leq 5 \quad \leftarrow \text{Simplify.}$$

Graph the solution:

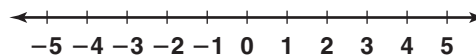


Graph each inequality on a number line.

1.  $x > -2$

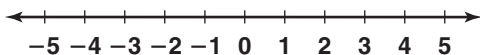


2.  $4 \geq a$

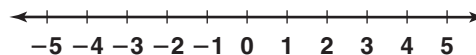


Solve each inequality. Graph the solution.

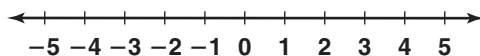
3.  $9 + a > 11$  \_\_\_\_\_



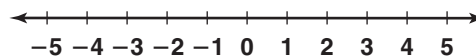
4.  $-4 + r < 0$  \_\_\_\_\_



5.  $2 > n - 1$  \_\_\_\_\_



6.  $1 + s \leq 5$  \_\_\_\_\_



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