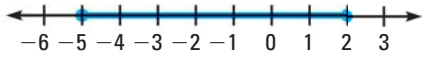
ANOTHER WAY In Example 3, you could solve $2 < x + 5 < 9$ by subtracting 5 from 2, $x + 5$, and 9 without first separating the compound inequality into two separate inequalities. To solve a compound inequality with *and*, you perform the same operation on each expression.

EXAMPLE 4 Solve a compound inequality with *and*

Solve $-5 \leq -x - 3 \leq 2$. Graph your solution.

$-5 \leq -x - 3 \leq 2$	**Write original inequality.**
$-5 + 3 \leq -x - 3 + 3 \leq 2 + 3$	**Add 3 to each expression.**
$-2 \leq -x \leq 5$	**Simplify.**
$-1(-2) \geq -1(-x) \geq -1(5)$	**Multiply each expression by -1 and reverse *both* inequality symbols.**
$2 \geq x \geq -5$	**Simplify.**
$-5 \leq x \leq 2$	**Rewrite in the form $a \leq x \leq b$.**

▶ The solutions are all real numbers greater than or equal to -5 *and* less than or equal to 2.



EXAMPLE 5 Solve a compound inequality with *or*

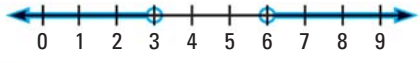
Solve $2x + 3 < 9$ *or* $3x - 6 > 12$. Graph your solution.

Solution

Solve the two inequalities separately.

$2x + 3 < 9$	*or*	$3x - 6 > 12$	**Write original inequality.**
$2x + 3 - 3 < 9 - 3$	*or*	$3x - 6 + 6 > 12 + 6$	**Addition or subtraction property of inequality**
$2x < 6$	*or*	$3x > 18$	**Simplify.**
$\frac{2x}{2} < \frac{6}{2}$	*or*	$\frac{3x}{3} > \frac{18}{3}$	**Division property of inequality**
$x < 3$	*or*	$x > 6$	**Simplify.**

▶ The solutions are all real numbers less than 3 *or* greater than 6.



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GUIDED PRACTICE for Examples 4 and 5

Solve the inequality. Graph your solution.

7. $-14 < x - 8 < -1$

8. $-1 \leq -5t + 2 \leq 4$

9. $3h + 1 < -5$ *or* $2h - 5 > 7$

10. $4c + 1 \leq -3$ *or* $5c - 3 > 17$