NAME _____ DATE _____ PERIOD _____

Lesson 7 Reteach

Solve One-Step Inequalities

Addition and Subtraction Properties	
Words	When you add or subtract the same number from each side of an inequality, the inequality remains true.
Symbols	For all numbers a, b, and c, 1. if $a < b$, then $a + c < b + c$ and $a - c < b - c$. 2. if $a > b$, then $a + c > b + c$ and $a - c > b - c$.

Example 1

Solve $x + 9 \leq 12$. Graph the solution on a number line.

$x + 9 \leq 12$ Write the inequality.

$-9 \quad -9$ Subtract 9 from each side.

$x \leq 3$ Simplify.

The solution is $x \leq 3$. To graph it, draw a closed dot at 3 and draw an arrow to the left on the number line.

Multiplication and Division Properties	
Words	When you multiply or divide each side of an inequality by the same *positive* number, the inequality remains true.
Symbols	For all numbers a, b, and c, where $c > 0$, 1. if $a < b$, then $ac < bc$ and $\frac{a}{c} < \frac{b}{c}$. 2. if $a > b$, then $ac > bc$ and $\frac{a}{c} > \frac{b}{c}$.

Example 2

Solve $3x > 15$. Graph the solution on a number line.

$3x > 15$ Write the inequality.

$\frac{3x}{3} > \frac{15}{3}$ Divide each side by 3.

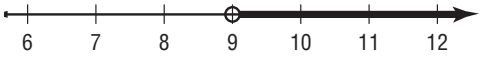
$x > 5$ Simplify.

The solution is $x > 5$. To graph it, draw an open dot at 5 and draw an arrow to the right on the number line.

Exercises

Solve each inequality. Then graph the solution on a number line.

1. $9d > 81$ ***d* > 9**



2. $t - 5 < 4$ ***t* < 9**

3. $j + 6 \geq 11$ ***j* ≥ 5**

4. $\frac{n}{3} \leq 7$ ***n* ≤ 21**