Name _____ Class _____ Date _____

Reteaching 1-4

Solving Inequalities

OBJECTIVE: Solving and graphing inequalities **MATERIALS:** None

To solve an inequality, use the techniques used to solve an equation with one difference: when multiplying or dividing each side by a negative number, reverse the inequality.

Examples

Solve each inequality. Graph the solutions.

a. $2x - 5 \geq 13$ **b.** $4 + 3(1 - 2x) > 37$

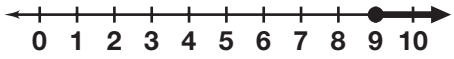
Use the properties of real numbers and the properties of inequalities to rewrite each inequality in equivalent forms.

a. When dividing each side by a positive number, do not reverse the inequality.

$2x - 5 \geq 13$

$2x \geq 18$ ← **Add 5 to each side.**

$x \geq 9$ ← **Divide each side by 2.**



b. When dividing each side by a negative number, reverse the inequality.

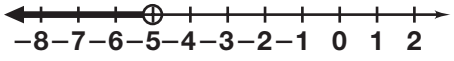
$4 + 3(1 - 2x) > 37$

$4 + 3 - 6x > 37$ ← **Distributive Property**

$7 - 6x > 37$ ← **Simplify.**

$-6x > 30$ ← **Subtract 7 from each side.**

$x < -5$ ← **Divide each side by –6 and reverse the inequality.**



Exercises

Solve each inequality. Graph the solutions.

1. $3(y - 5) \leq 6$ **2.** $-4t > 2$ **3.** $3 - 4m < 11$ **4.** $7d \leq 2(d + 5)$

5. $-2(3 - h) + 2h \geq 0$ **6.** $3k - (1 - 2k) > 1$ **7.** $5p + 12 \leq 9p - 20$ **8.** $3 - 2r < 7 - r$