May 8 **Solving Inequalities**

< is less than
> is greater than
≤ is less than or = to
≥ is greater than or = to

Ex 1 Solve & graph the solution:

$$2(5x-4) < +8x-60$$

$$10x-8 < 8x-60$$
$$+8 \quad +8$$

$$2x < -52$$

$$\boxed{x < -26}$$

SPECIAL RULE

If an inequality is multiplied or divided on both sides by a Negative #, Reverse the direction of the inequality symbol.

Ex 2 Solve + graph

$$-\frac{3}{7}(x+6) \leq 4x - 2(x-3)$$

$$-3(x+6) \leq 28x - 14(x-3)$$

$$-3x - 18 \leq 28x - 14x + 42$$

$$\begin{array}{rcl} -3x - 18 & \leq & 14x + 42 \\ -14x \quad +18 & & -14x \quad +18 \end{array}$$

$$\frac{-17x}{-17} \leq \frac{60}{-17}$$

$$x \geq \frac{60}{-17}$$