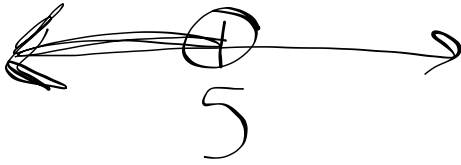


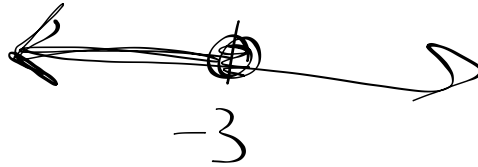
Warm-Up

Graph the following inequalities:

1. $x < 5$



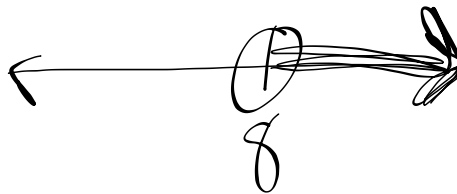
3. $p \leq -3$



2. $m \geq 12$



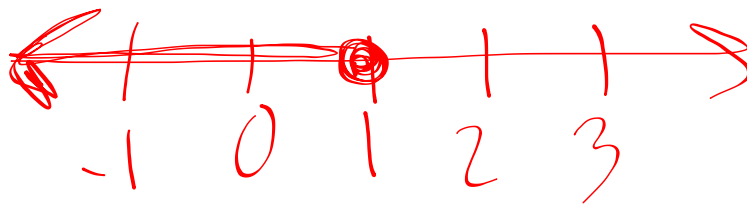
4. $a > 8$



(10) $4 \geq k + 3$

-3 -3

$1 \geq k \rightarrow k \leq 1$



Solving Multi-Step Inequalities

Clear Learning Target

You will be able to solve one-, two-, and multi-step inequalities using properties of inequalities.

Example #1: Solve the inequality. $60t > 8$

$$\frac{\cancel{60}t}{\cancel{60}} > \frac{8}{\cancel{60}}$$
$$t > \frac{2}{15}$$

You Try! Solve the inequality. $\frac{m}{5} > -3$

$$\cancel{5} \cdot \frac{m}{\cancel{5}} > -3 \cdot 5$$
$$m > -15$$

Example #3: Solve the inequality.

$$-11y - 13 > 42$$

$$+13 \quad +13$$

$$\frac{-11y}{-11} > \frac{55}{-11}$$

$$y < -5$$

You Try! Solve the inequality.

$$4(3t - 5) > 16$$

$$\begin{array}{r} 12t - 20 > 16 \\ +20 \quad +20 \\ \hline 12t > 36 \\ \frac{12t}{12} > \frac{36}{12} \\ t > 3 \end{array}$$

Example #4: Solve the inequality.

$$\begin{array}{r}
 30z - 18 < 36z \\
 \cancel{-30z} \quad \quad \quad \cancel{-30z} \\
 \hline
 -18 < 6z \\
 \hline
 \begin{array}{r}
 6 \quad \quad 6 \\
 -3 < z \\
 z > -3
 \end{array}
 \end{array}$$

You Try! Solve the inequality.

$$\begin{array}{r}
 2h + 12 > -24 + 3h \\
 \begin{array}{r}
 \cancel{-2h} \quad \quad \quad \downarrow \quad \quad \quad \cancel{-2h} \\
 \hline
 12 > -24 + h \\
 +24 \quad +24 \quad \downarrow \\
 \hline
 h < 36
 \end{array}
 \end{array}$$

$12 > -24 + 1h$
 $+24 \quad +24$
 $\frac{36}{1} > \frac{1h}{1}$

$$\begin{array}{r}
 2h + 12 > -24 + 3h \\
 \hline
 12 + 24 > 3h - 2h
 \end{array}$$