Name _____
Date _____ Period _____

Multiplication Property of Inequalities for $c > 0$

If $a > b$, then $a \cdot c > b \cdot c$ ...or if $a < b$, then $a \cdot c < b \cdot c$

We can multiply both sides of an inequality by the same positive value and the inequality is still a true statement (keep the same inequality sign).

Multiplication Property of Inequalities for $c < 0$

If $a > b$, then $a \cdot c < b \cdot c$ ...or if $a < b$, then $a \cdot c > b \cdot c$

If we multiply both sides by a negative number, we must flip the inequality sign.

Division Property of Inequalities for $c > 0$

If $a > b$, then $\frac{a}{c} > \frac{b}{c}$ ...or if $a < b$, then $\frac{a}{c} < \frac{b}{c}$

We can divide both sides of an inequality by the same positive value and the inequality is still a true statement (keep the same inequality sign)..

Division Property of Inequalities for $c < 0$

If $a > b$, then $\frac{a}{c} < \frac{b}{c}$ ...or if $a < b$, then $\frac{a}{c} > \frac{b}{c}$

If we divide both sides by a negative number, we must flip the inequality sign.

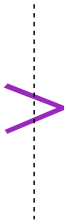
If we ever multiply or divide by a negative number, we must flip the inequality sign.

Inverse Operations

Pairs of operations that "undo" each other.

Multiplication and Division are Inverse Operations
Multiplication and Division "undo" each other.

Any operation done to the left side... ...must be done to the left side



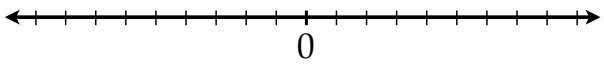
...must be done to the right side Any operation done to the right side...

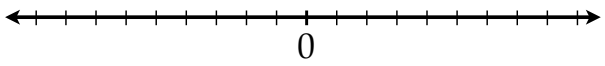
If we ever multiply or divide by a negative number, we must flip the inequality sign.

Solve and graph the following inequalities.

$\frac{x}{3} > 2$

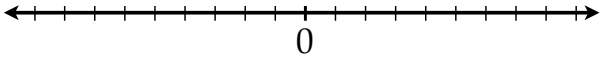
$5x \leq -20$



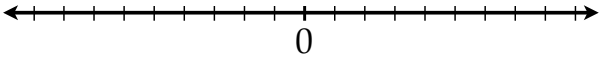


If we ever multiply or divide by a negative number, we must flip the inequality sign.
Solve and graph the following inequalities.

$-4x < 28$

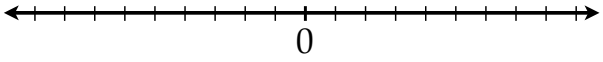


$-\frac{x}{5} \geq -1$

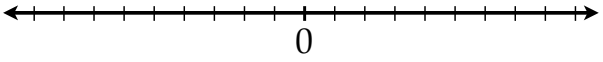


If we ever multiply or divide by a negative number, we must flip the inequality sign.
Solve and graph the following inequalities.

$\frac{4}{5}x < 4$



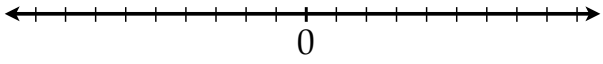
$-\frac{2}{3}x \leq 4$



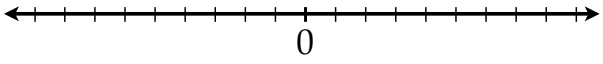
If we ever multiply or divide by a negative number, we must flip the inequality sign.

Solve and graph the following inequalities.

$-6 < \frac{3}{4}x$



$1 \geq -\frac{1}{5}x$



If we ever multiply or divide by a negative number, we must flip the inequality sign.