

# 4.3 Part 2 $\cdot$ ( $\div$ ) by negatives 11/13 P. 2

EQ.: How does multiplying/dividing by a negative affect an inequality

Ex 1

$$-3y \geq 15$$

$$\begin{array}{r} -3y \geq 15 \\ \hline -3 \downarrow -3 \\ y \leq -5 \end{array}$$

FLIP

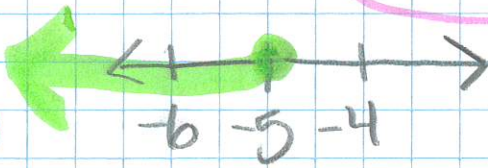
Step 1:

\* Divide both sides by (-3).

Step 2:

Since we divided by a negative, the inequality must flip.

Step 3: Graph!



Ex 2

$$\frac{r}{-6} < 2 \quad \rightarrow \quad -\frac{1}{6}r < 2$$

$$\begin{array}{r} \frac{r}{-6} < 2 \quad (-6) \\ \hline -6 \downarrow -6 \\ r > -12 \end{array}$$

FLIP

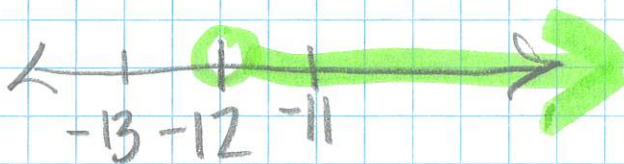
Step 1:

\* Multiply each side by -6

Step 2:

\* Flip the inequality sign.

Step 3: Graph



Ex 3

$$5y > -20$$

Not part of variable

Divide by (+) 5, inequality stays the same.