6.2: Solve Inequalities Using Multiplication and Division

Goals:

***Solve Inequalities Using Multiplication and Division**

- Be aware of when to reverse the inequality sign.

NEW RULE!!!!!!!!!!

IF YOU

MULTIPLY OR DIVIDE BY A NEGATIVE YOU MUST REVERSE THE INEQUALITY SIGN!!!

Solve and graph each inequality:

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

$x < 20$

Ex: $\frac{x}{3} > 8$

$x > 24$

Ex: $\frac{m}{-8} \leq -2$

$m \geq 16$

Ex: $\frac{y}{2.5} \geq -4$

$y \geq -10$

Ex: $\frac{x}{-6} < 7$

$x > -42$

Ex: $-3x > 24$

$x < -8$

Ex: $\frac{y}{7} \geq -4$

$y \geq -28$

Ex: $-6x \leq 18$

$x \geq -3$

****Here are some trickier ones if you want to graph****

Ex: $12 < \frac{x}{-4}$

$-3 > x$

Ex: $16 > \frac{m}{-7}$

$-112 < m$

(open, pointing right)

Ex: $5v \leq -45$

$v \leq -9$

Ex: $24 \geq -6n$

$-4 \leq n$

Ex: A student pilot plans to spend 80 hours on flight training to earn a pilot's license. The student has saved $6000 for training. Write an inequality to represent *r*, the hour rate the student can afford to pay. What are the possible hourly rates?

$80r \leq 6000$

$r \leq 75$

$75/hour or less