

# 6.2

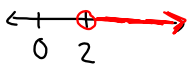
## SOLVING INEQUALITIES USING MULTIPLICATION/DIVISION

**IMPORTANT NOTE:**  
**IF YOU MULTIPLY OR DIVIDE BY A NEGATIVE #, YOU MUST FLIP YOUR INEQUALITY SIGN!**

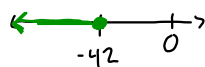
Examples...  
 Solve & Graph each Inequality:

1.  $6y > 12$       2.  $\frac{x}{7} \leq -6$

$\frac{6y}{6} > \frac{12}{6}$   
 $y > 2$



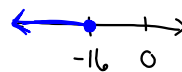
~~$\frac{x}{7} \leq (-6)7$~~   
 $x \leq -42$



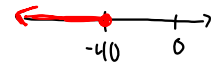
Examples continued...  
 Solve and Graph each Inequality:

3.  $3y \geq 48$       4.  $\frac{-m}{5} \geq 8$

$\frac{3y}{3} \geq \frac{48}{3}$   
 $y \geq 16$



~~$5 \left( \frac{-m}{5} \right) \geq (8)5$~~   
 $-1(-m) \geq (40) \cdot -1$   
 $m \leq -40$



Translate, solve and graph.....

5. The product of -15 and y is less 90.

~~$-15y < 90$~~   
 $\frac{-15y}{-15} < \frac{90}{-15}$   
 $y > -6$



6. The quotient of w and 24 is greater than or equal to -1/6.

~~$\frac{w}{24} \geq \left(-\frac{1}{6}\right)24$~~   
 $w \geq -4$



7. Word Problem Practice...

**Road Trip** You and three of your friends plan to rent a car for a road trip. The group budget is \$350. The group decides to split the cost of the rental equally.

- Write and solve an inequality that gives the cost  $c$  in dollars that each person will pay.
- What is the greatest amount of money that each of you can spend?

$4c \leq 350$   
 $\frac{4c}{4} \leq \frac{350}{4}$   
 $c \leq \$87.50$