

Name

# 5.2 Solve Inequalities Using

## Multiplication and Division

Alg I

I can solve inequalities using multiplication and division.

\*When solving an inequality, if you must multiply/divide by a negative number, you must flip the sign.

### Example 1:

$$1) 3x \frac{x}{3} > 8 \times 3$$

$$x > 24$$



$$2) 8x \frac{m}{8} \leq -2 \times 8$$

$$m \leq -16$$



$$3) 2.5x \frac{y}{2.5} \geq -4 \times 2.5$$

$$y \geq -10$$

$$\begin{array}{r} 2.5 \\ 2.5 \\ \hline -10.0 \end{array}$$



### Example 2:

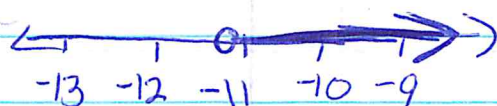
$$4) -4x \frac{x}{-4} > 12x - 4$$

$$x < -48$$



$$5) \frac{m}{-7} < 1.6x - 7$$

$$m > -11.2$$



$$\begin{array}{r} 4 \\ 1.6 \\ \times 7 \\ \hline 11.2 \end{array}$$

Multiplication Property of Inequality:  
If  $a < b$  and  $c > 0$ , then  $ac < bc$   
If  $a < b$  and  $c < 0$ , then  $ac > bc$

C

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I can solve inequalities using multiplication and division.

### Example 3:

$$6) \frac{5v}{5} > \frac{45}{5}$$

$$v > 9$$



$$7) \frac{-6n}{-6} < \frac{24}{-6}$$

$$n > -4$$



Ch. 5 Quiz

Division Property of Inequality:

• If  $a > b$  and  $c > 0$ , then

$$\frac{a}{c} > \frac{b}{c}$$

• If  $a < b$  and  $c < 0$ , then

$$\frac{a}{c} > \frac{b}{c}$$

\* Complete Skills Practice, pg. 308, #

### Example 4/5:

$$8) \frac{90r}{90} \leq \frac{6300}{90}$$

$$r \leq 70$$

At most \$70/hour

