

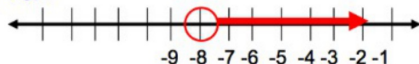
5.1.1 CW: Inequalities

Name _____

Symbol	Meaning	Example	Closed or Open Circle?
$<$	Less Than	$x < 9$ $3 < 5$ $x > 4$	open
$>$	Greater Than	$5 > 3$ $4 = 4$	open
\leq	Less Than or Equal To	$3 \leq 5$	closed } = to
\geq	Greater Than or Equal To	$4 \geq 4$ $5 \geq 3$	closed } fill it in

Use an open circle to show $<$ or $>$

Example: $x > -8$



Use a closed circle to show \leq or \geq

Example: $x \leq 2$

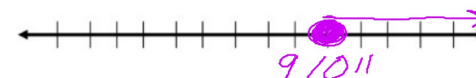


Graph these inequalities:

$$x < 3$$



$$a \geq 10$$



$$y \leq -20$$



$$x > 0$$

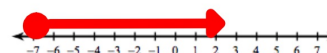


Choose the correct inequality for each situation below:

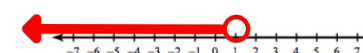
a $x > 75$ b $x < 75$ c $x \leq 75$ d $x \geq 75$

1. Your teacher has more than 75 followers on Twitter. $x > 75$
2. Your score must at least 75 to be a passing grade. $x \geq 75$
3. No more than 75 students can ride the bus to Valleyfair. $x \leq 75$
4. The officer gave the principal a ticket because his speed exceeded 75mph. $x > 75$
5. The maximum weight allowed in the bouncy house is 75 pounds. $x \leq 75$
6. There were no less than 75 kids in line for the concession stand. $x \geq 75$

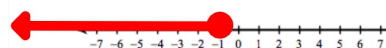
Write an inequality for each graph.



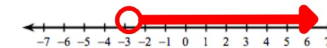
$$x \geq -7$$



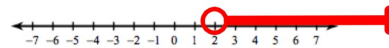
$$x < 1$$



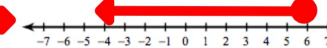
$$x \leq -1$$



$$x > -3$$



$$y > 2$$



$$x \leq 6$$

Investigating Inequalities

1. Pick 2 numbers and write an inequality $\frac{12}{\text{number}} > \frac{8}{\text{number}}$

2. Do each operation to both sides of your inequality and write the correct inequality symbol between your numbers.

a. Add 4 $16 > 12$ b. Subtract 4 $8 > 4$

c. Multiply by 4 $48 > 32$ d. Multiply by -4 $-48 < -32$

e. Divide by 4 $3 > 2$ f. Divide by -4 $-3 < -2$

g. Add 2 $14 > 10$ h. Subtract 2 $10 > 6$

i. Multiply by 2 $24 > 16$ j. Multiply by -2 $-24 < -16$

k. Divide by 2 $6 > 4$ l. Divide by -2 $-6 < -4$

3. When did you have to change the inequality symbol?

when you multiply or divide by a negative #