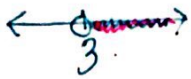


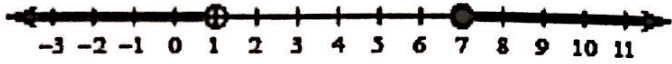
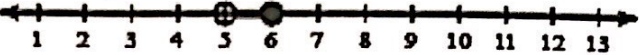
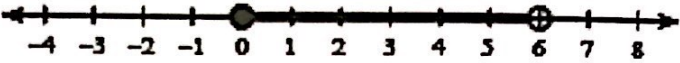
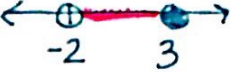

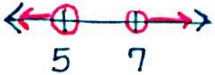


Inequalities Study Guide

What you need to know & be able to do	Things to remember	Examples	
<p>1. Solving and Graphing Linear Inequalities.</p>	<ul style="list-style-type: none"> Solve an inequality by isolating the variable. Golden Rule: Dividing by a negative number flips the inequality. 	<p>a. Solve and graph: $\frac{9}{3} < \frac{3x}{3}$</p> $3 < x$ $x > 3$ 	<p>b. Solve and graph: $4 > -3x + 10$</p> $\frac{-10}{-3} \frac{-10}{-3}$ $\frac{-6}{-3} > \frac{-8x}{-3}$ $2 < x$ $x > 2$ 
		<p>c. Solve and graph</p> $-3(x+2) < -15$ $\frac{-3x-6}{+6} < \frac{-15}{+6}$ $\frac{-3x}{-3} < \frac{-9}{-3}$ $x > 3$ 	<p>d. Solve: $\frac{7}{-7} - 2t \leq \frac{21}{-7}$</p> $\frac{-2t}{-2} \leq \frac{14}{-2}$ $t \geq -7$ <p>Is $x = -7$ a solution? <u>yes</u></p> <p>Is $x = -4$ a solution? <u>yes</u></p> <p>Is $x = -10$ a solution? <u>no</u></p>
<p>2. Creating Inequalities</p>	<ul style="list-style-type: none"> Define a variable for what you are solving for Look for key words 	<p>a. The 9th grade class is putting on a variety show to raise money. It costs \$700 to rent the banquet hall that they are going to use. If they charge \$15 for each ticket, how many tickets do they need to sell to raise at least \$1000?</p> <p>$x$: # of tickets</p> $\frac{15x - 700}{+700} \geq \frac{1000}{+700}$ $\frac{15x}{15} \geq \frac{1700}{15}$ $x \geq 113.3$ <p>They must sell at least <u>114</u> tickets.</p>	<p>b. Cecilia has \$30 dollars to spend at a carnival. Admission costs \$5 and each ride ticket costs \$1.50. What is the maximum amount of tickets she can purchase? x: # of tickets</p> $\frac{5 + 1.50x}{-5} \leq \frac{30}{-5}$ $\frac{1.50x}{1.50} \leq \frac{25}{1.50}$ $x \leq 16.67$ <p>Cecilia can purchase no more than <u>16</u> tickets.</p>

<p>3. Graphing and Naming Compound Inequalities</p>	<ul style="list-style-type: none"> • And: shade between boundary points • Or: shade outside boundary points 	<p>a. $x < 1$ OR $x \geq 7$</p>  <p>b. $5 < x \leq 6$</p>  <p>c. $0 \leq x < 6$</p>  <p>d. Graph $-2 < x \leq 3$</p>  <p>e. Graph $x < 0$ OR $x \geq 3$</p> 	
<p>4. Creating Compound Inequalities</p>	<ul style="list-style-type: none"> • Look for key words that indicate if values are included 	<p>a. An iguana needs an environment between 70 degrees and 95 degrees. Write a compound inequality.</p> $70 < x < 95$	<p>b. Water is not a liquid when it is less than 0 degrees Celsius or above 100 degrees Celsius. Write a compound inequality.</p> $x < 0 \text{ or } x > 100$
<p>5. Solving Compound Inequalities</p>	<ul style="list-style-type: none"> • 	<p>a. Solve and graph:</p> $\frac{4x}{4} < \frac{20}{4} \text{ OR } \frac{x+3}{-3} > \frac{10}{-3}$ $x < 5 \text{ or } x > 7$ 	<p>b. Solve and graph:</p> $5 < 3x - 10 \leq 17$ $+10 \quad +10 \quad +10$ $\frac{15}{3} < \frac{3x}{3} \leq \frac{27}{3}$ $5 < x \leq 9$ 