

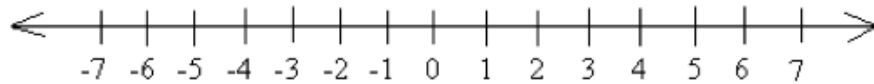
## Chapter 2 - Inequalities

### 2.1 Objective: To Solve inequalities in one variable

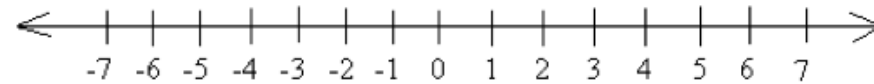
DO NOW:

Graph the solution of each inequality on a number line.

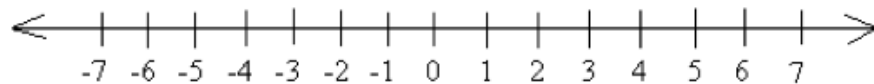
1.  $m < 4$



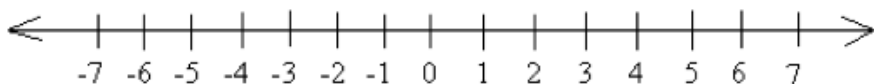
2.  $m \geq 4$



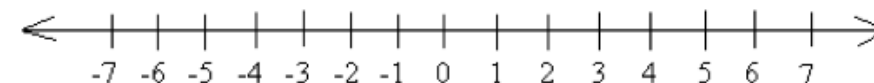
3.  $m < -4$



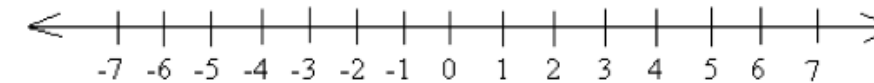
4.  $m \geq -4$



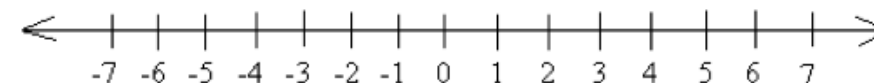
1.  $m < 4$



2.  $m \geq 4$






3.  $m < -4$



4.  $m \geq -4$



Graph the following:

	Linear equation	Linear inequality	
Verbal Solution			
Endpoints	<i>Included or Excluded</i>	<i>Included or Excluded</i>	<i>Included or Excluded</i>
Algebraic Solution	$x = 4$	$x > 4$	$x \geq 4$
Graphical Solution			
Number of Solutions	One solution	Infinitely many solutions	

What is the definition of a **solution**?

Graph these:

$-5 < t$



$v \leq 0$



$-2 > y$



**EXPLORE: Find solutions of inequalities**

- 1) Circle the values in the list below that satisfy the inequality  $-3x > 0$ .

$-6, -2, 0, 3, 9$

Show any work below:

List 3 more values that satisfy the inequality  $-3x > 0$

\_\_\_\_\_

2)

- a) Circle the values in the list below that satisfy the inequality  $x < 0$ .

$-6, -2, 0, 3, 9$

List 3 more values that satisfy the inequality  $x < 0$

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- b) Circle the values in the list below that satisfy the inequality  $x > 0$ .

$-6, -2, 0, 3, 9$

List 3 more values that satisfy the inequality  $x > 0$

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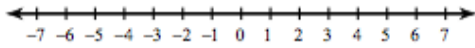
**DRAW CONCLUSIONS**

- 3) Compare the values that satisfy the inequalities  $-3x > 0$  and  $x > 0$ . What do you notice?
- 4) Compare the values that satisfy the inequalities  $-3x > 0$  and  $x < 0$ . What do you notice?
- 5) What can you conclude about the way to find the solution to an inequality when you multiply or divide by a negative number?

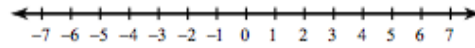
## Graphing Inequalities

Draw a graph for each inequality.

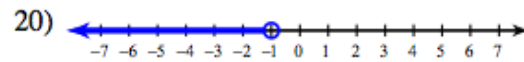
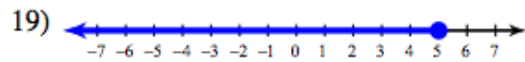
1)  $n \leq -5$



2)  $n \leq 5$

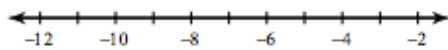


Write an inequality for each graph.

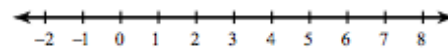


Solve each inequality and graph its solution.

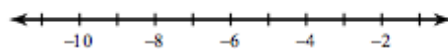
1)  $-12 > x - 7$



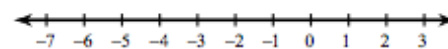
2)  $-1 + r \geq 4$



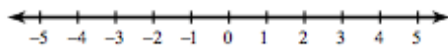
3)  $n - 6 \leq -14$



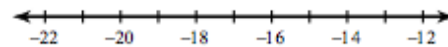
4)  $b - 7 < -12$



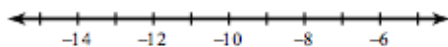
5)  $a - 17 > -16$



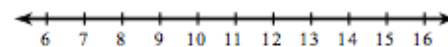
6)  $15 + x \leq 0$



7)  $3 + v \leq -9$



8)  $8 \geq n - 6$

**Homework: p. 61 Oral Ex. 1- 8, p. 62 Oral Ex. 11-16**