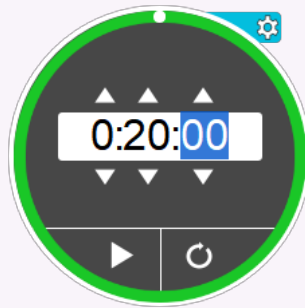


# Any Homework Questions???



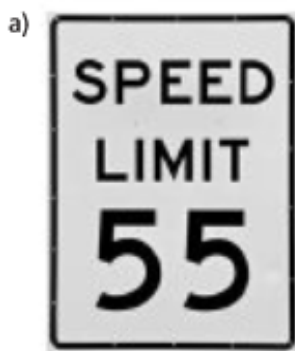


## Section 6.3 Linear Inequalities

An **inequality** is used to model a situation that can be described by a **range of numbers** rather than a single number.

	What does it mean?	Possible solutions
1) $x = 3$	x has to be 3	3
2) $x > 3$	x is any number greater than 3	4, 5.5, 62.58 103 <sup>2</sup> / <sub>5</sub>
3) $x \geq 3$ <small>equal to</small>	x is any number greater than and can include 3	92, <sup>25</sup> / <sub>2</sub> , 67.3, 3
4) $x \leq 3$	x is any number less than or equal to 3	3, 2.9, <sup>2</sup> / <sub>3</sub> -2.8

Define a variable and write an inequality for each situation. → "Let" statement



Let "s" represent speed  
 $s \leq 55$



Let "h" represent height  
 $h \geq 102$



Let "t" represent temperature  
 $t < 4$



Let "a" represent age  
 $a \geq 14$

- (1) Define a variable ["Let "statement]  
 (2) write an inequality to describe each situation:

A. Contest entrants must be at least 18 years old.

1) Let "a" represent the age

2)  $a \geq 18$

B. The temperature has been below -5 degrees for the last week.

A) Let "t" represent the temperature.

B)  $t < -5$

C. You must have 7 items or less to use the express checkout.

a) Let " " represent

B)

D. Scientists have identified over 40 species of dinosaurs

$y > -6$

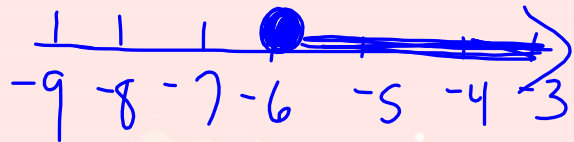
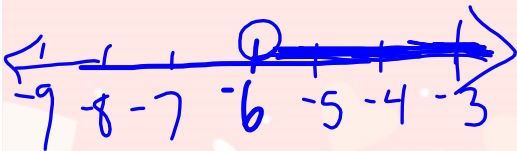
0, -2, -5, 4, 8, -3, 15, 3,  $-\frac{4}{5}$ , 32, 100, 14, 18, 9.3

What are 4 possible numbers for "y" ?

Because there are so many possible solutions for inequalities they are usually represented on a number line [Graph]

$y > -6$  ,  $y \in \mathbb{R}$   $y \geq -6$   $y \in \mathbb{R}$

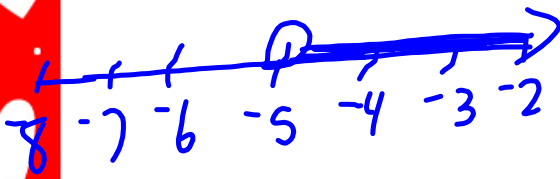
↑ belongs to  
Real #'s  
[Rational/Irrational]





- A. Graph each inequality on a number line  
 B. Write 4 numbers that can be a solution to the inequality

A.  $t > -5$



B.  $-2 \geq x$

$x \leq -2$



C.  $0.5 \leq a$