## Given a line

- a) How many Point-Slope equations are there for the line. Infinitely Many
- b) How many Slope-Intercept equations are ther for the line.

  Only ONE

ec 6-2: Slope-Intercept Form for the equation of a line.

$$y = mx + b$$

slope Y-intercept

Use this equation of a line:

$$y = -3x + 5$$

Write this equation in Point-Slope Form.

$$y-y_{1}=m(x-x_{1})$$
 $y-5=-3(x-0)$ 
 $y-5=-3x$ 

Identify the Slope and y-intercept of each equation.

Equations should be Slope-Intercept Form to answer these questions

$$y = 3x - 1$$

$$y = x + 13.7$$

$$y = -7x + 0$$
Slope:  $-7$ 
y-int:

$$y - 6 = -3(x + 1)$$

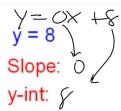
Slope: -3 v-int: 3

$$\frac{1}{2} = -3x - 3 + 6$$

$$x = 4$$

Slope: undefined y-int: none

This is a Vertical Line Slope is Undefined and it doesn't touch the y-axis!



Slope: 
$$-\frac{1}{2}$$
  
y-int:  $\frac{1}{2}$   
 $-\frac{1}{3}$   
 $-\frac{1}{3}$ 

3x + 6v = 24

## Writing the equation of a line in Slope-Intercept Form:

Write the equation of the line that passes through these two points in Slope-Intercept Form

(2, 1) and (-3, 21)

## Method 1:

First: Find the slope.  $M = \frac{2l-1}{-3-7} = \frac{2D}{-5} = -4$ 

Method 2:

(2, 1) and (-3, 21)

First: Find the slope. m = -4

Second: Replace m in y = mx + b with the slope y = -4x + b

Third: Replace y and x with the coordinates of one of the points 1 = -4(2) + 5

Fourth: Solve for b.