Unit 4 Day 4

m= 8-4 = 4

WRITING EQUATIONS OF LINES In Slope-Intercept Form AND Point-Slope Form

1. Slope intercept form: y=mx+b Point-Slope Form: y-y=m(x-x)

2. Write an equation of the line in **Slope-Intercept Form** with a slope of  $-\frac{2}{5}$  and point (0,6).

$$y = -\frac{2}{5}x + 6$$

3. Write the equation of the line in **slope intercept form** that passes through (1, -4) with a slope of -5.



4. Write the equation of the line in **slope intercept form** that passes through the points (2, -10) and (4, -4)

$$m = \frac{3}{4+10} = \frac{6}{2} = 3 \qquad y = mx+b$$

$$m = \frac{-4+10}{4-2} = \frac{6}{2} = 3 \qquad y = mx+b$$

$$-4 = 3(4)+b \qquad y = 3x+b$$

$$-4 = 12+b \qquad -16=b$$

5. Write an equation of the line that has an x-intercept of 8 and a y-intercept of -12 in **slope intercept** 10, -12form. (8,0)

$$m = \frac{3/2}{12} \qquad m = \frac{0+12}{8-0} = \frac{12}{8} = \frac{3}{2}$$
  
$$b = \frac{-12}{8} \qquad y = \frac{3}{2} \times -12$$

6. Write an equation in **Point-Slope Form** of the line that that passes through the point (4, 7) and has a slope of  $\frac{3}{2}$ .

7. Write an equation in **Point-Slope Form** of the line that passes through the points: (-1, 4) and (2, 8)

y-4= = (x+1) or

y-8=4(x-2)

8. Write an equation of the line that passes through the point (8, -3) and has a slope of  $\frac{3}{2}$ .

- a. Write first in Point Slope:
- b. Now rearrange into slope-Intercept:

y + 3 = 
$$\frac{3}{2}(x-8)$$
  
y + 3 =  $\frac{3}{2}x - 12$   
y =  $\frac{3}{2}x - 15$ 

9. Write an equation of the line that passes through the points: (-12, 5) and (-6, 2)



11. Determine which form – slope-intercept or point-slope – would be the better (more efficient) method of writing an equation of a line based on the information provided. You do NOT have to write the line.

a. m = 2, point @ (-2,0) x - intb. Two points @ (3,5) and c. Two points @ (-4,7) and (0,6) y - int f y - int fStope-int pt - SLOPe

## 12. Write an equation of the line shown.



c. How many miles had your car logged **before** you and your friend embarked on this road trip? y - 20000 = 75x - 187.5

19,812.50 miles

- y 20000 = 75x 187.5 y = 75x + 19,812.50
- d. *Up for a Challenge*! How long will it take you to reach the Staples Center if its 1,740 miles from your home in Chicago?
  - $\begin{array}{l} 21552.5 = 75x + 19812.50 \\ 1740 = 75x \\ \hline a3.2 hours \end{array} \qquad \underbrace{PR}_{75} \left( \frac{1740 \ (distance)}{75 \ (speed)} = 23.2 \ hours \\ (time) \end{array} \right)$