Name_____

Teacher_____

Date_____ Hour_____

What is the formula for calculating slope?

$$\text{slope, } m = \frac{y_2 - y_1}{x_2 - x_1}$$

Write the equation for
POINT-SLOPE FORM: $(y - y_1) = m(x - x_1)$ m = _Slope_ (x_1, y_1) = any point on the line

Write the equation for
SLOPE- INTERCEPT FORM: $y = mx + b$ m = _Slope_, b = _y-intercept_

Write the equation of the line in ==slope intercept form== **with the given slope and y-intercept.**

1) slope: -2
   y-int: (0,3)

   m = -2   b = 3   1. $y = -2x + 3$

2) slope: 4
   y- int: (0,-4)

   m = 4   b = -4   2. $y = 4x - 4$

3) slope: $\frac{3}{4}$
   y-int: (0,-2)

   m = $\frac{3}{4}$ b = -2   3. $y = \frac{3}{4}x - 2$

Write an equation in ==point slope and slope intercept form== **of a line that passes through the given point and has the given slope m.**

4.) $(-3, -4); m = -\frac{1}{2}$

$-4 = -\frac{1}{2}(-3) + b$

$-4 = \frac{3}{2} + b$

$-\frac{3}{2} \quad -\frac{3}{2}$

$-5\frac{1}{2} = b$

$\boxed{-\frac{11}{2}}$

4. Point-slope form $y + 4 = -\frac{1}{2}(x + 3)$

   Slope-intercept form $y = -\frac{1}{2}x - \frac{11}{2}$

5.) $(5,-6); m = -1$

$-6 = -(5) + b$

$+5 \quad +5$

$\boxed{-1} \; b$

5. Point-slope form $y + 6 = -1(x - 5)$

   Slope-intercept form $y = -x - 1$

6.) $(0, -3); m = \frac{4}{3}$

6. Point-slope form $y + 3 = \frac{4}{3}(x - 0)$

   Slope-intercept form $y = \frac{4}{3}x - 3$