General Algebra II
Functions, Equations, and Graphing Unit

Name _____
Period _____ Date _____

Worksheet 2-2-6 ~ Point-Slope Form $(y - y_1) = m(x - x_1)$

Note: A useful form of Linear Equations is Point-Slope form. This is used when we know (or can derive) a slope and also have a point. From this form, we rewrite the equation in $y = mx + b$ or $Ax + By = C$ forms.

Point-slope Form: *Given a point (x_1, y_1) and a slope (m), the equation is: $y - y_1 = m(x - x_1)$*

1. Given $m = -3$ *and* $(-3,-2)$ we substitute these values into our equation:
2. $y-(-2)=-3(x-(-3))$; $y+2=-3(x+3)$ This is proper point-slope form.
3. Rewrite in slope-intercept form *(y=mx+b)*: $y=-3(x+3)-2$; $y=-3x-11$
4. Rewrite in standard form *(Ax + By = C)*: $3x+y=-11$

Generate an equation in point-slope form given the following information:

1) $m = 3$, *containing* $(2,3)$

2) $m = 3$, *containing* $(-4,7)$

3) $m = -4$, *containing* $(0,3)$

4) $m = -5$, *containing* $(7,2)$

5) $m = \frac{2}{3}$, *containing* $(3,2)$

6) $m = -\frac{3}{2}$, *containing* $(2,-3)$

7.) $(-3, 1)$ *and* $(5,4)$

8.) $(5, -6)$ *and* $(2, 3)$

9.) $(2, -2)$ *and* $(-6, 1)$

10.) $(3, 4)$ *and* $(-7, 4)$

11.) $(0, -2)$ *and* $(7, 0)$

12.) $(-5, -1)$ *and* $(4, -7)$