**Practice with Point-Slope Form**

1. Is (–7,5) a point on the graph of the line $y-5 =\frac{9}{4}(x+7)$ ? (Hint: Evaluate the equation when *x* = –7 and *y* = 5.) Show your work.

For each equation in point-slope form, identify the point and the slope. Then graph each equation. Test your point in the equation to be sure that the point makes the equation true.

1. $y-6 =\frac{–3}{2}(x-1)$

point is (\_\_\_,\_\_\_\_) , slope is \_\_\_\_

Substitute your point into the equation

and simplify:



1. $y-2 =\frac{1}{5}(x+7)$

point is (\_\_\_,\_\_\_\_) , slope is \_\_\_\_

Substitute your point into the equation

and simplify:

Point-Slope Form of a Line $y-y\_{1}=m(x-x\_{1})$

1. Find an equation for each line described below:
2. Through (10,6) with slope $\frac{-6}{5}$
3. Through (–3, –2) with slope 4
4. Through the two points (–1,2) and (3,4)

 Step 1: find the slope, *m*:

Step 2: use the point-slope form to write an equation.

1. Through (7,–8) and parallel to the line $y-4 =\frac{2}{5}(x-3)$
2. *y*-intercept 8, slope –4
3. During recent flooding along the Connecticut River, water was rising at the rate of 4 inches per hour. At 3 AM the water level was 6 feet above normal.
4. Find an equation that gives the level of the water at any time during the day. (Let midnight = 0, noon = 12, 1 PM = 13, etc.).
5. When will the water reach the level of 12 feet above normal?
6. At 2 AM the river at the Harborside in Middletown was 1 foot above flood stage. By 5 AM the water had risen to 2.7 feet above flood stage.
7. What is the slope and what does it mean in this context?
8. Write an equation that gives the level of the water above flood stage at any time during the day. Let midnight be time 0.
9. Transform the equation from part (b) into slope-intercept form to find the *y*-intercept.
10. What is the *y-*intercept and what does it mean in this situation?
11. a. Sketch the graph of the equation: *y –* 0 = 3(*x* –2).

b. Transform the equation into slope-intercept form.

1. What is the *y*-intercept?
2. a. Sketch the graph of the equation: *y* –7 = –4(*x* –1).

b. Transform the equation into slope-intercept form.

1. What is the *y*-intercept?