

**CW 15**

**Writing Equations in Point-Slope Form**

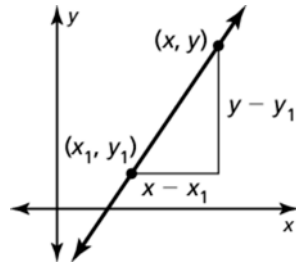
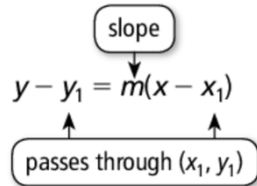
**Point-Slope Form**

A linear equation written in the form  $y - y_1 = m(x - x_1)$  is in **point-slope form**.

The line passes through the point  $(x_1, y_1)$ , and the slope of the line is  $m$ .

$(x_1, y_1) \quad (x_2, y_2)$

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



**Write an equation in point-slope form of the line.**  $y - y_1 = m(x - x_1)$

1.  $(-2, 1); m = -3$

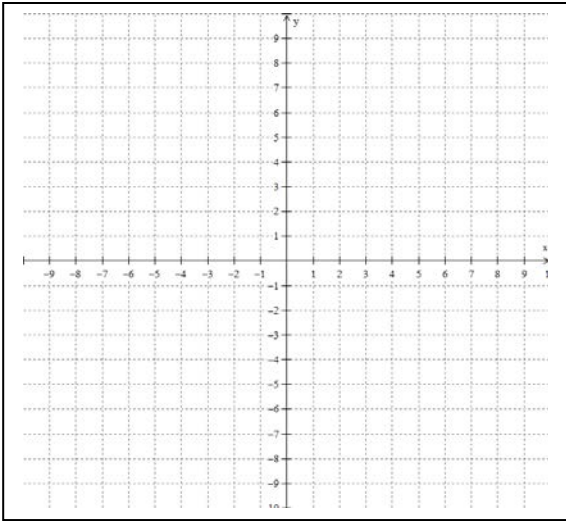
2.  $(1, 2); m = -\frac{1}{2}$

3. a. Find the slope that goes through the points:  $(-3, 2)$  and  $(2, -8)$ . Use  $m = \frac{y_2 - y_1}{x_2 - x_1}$ .

b. Find the point-slope equation of the line that goes through those points. Use  $y - y_1 = m(x - x_1)$ .

c. Use your equation from part 'b' and get the equation into slope-intercept form,  $y = mx + b$

d. Graph your equation from part c. Are the original points  $(-3,2)$  and  $(2,-8)$  on the line?



4. a. Find the slope that goes through the points:  $(1,0)$  and  $(0,8)$ . Use  $m = \frac{y_2 - y_1}{x_2 - x_1}$ .

b. Find the point-slope equation of the line that goes through those points. Use  $y - y_1 = m(x - x_1)$ .

c. Use your equation from part 'b' and get the equation into slope-intercept form,  $y = mx + b$

d. Graph your equation from part c. Are the original points on the line?

