

POINT-SLOPE FORM OF A LINEAR EQUATION AND FUNCTION NOTATION

Learning Targets:

1. Write and graph equations in point-slope form
2. Use Function Notation
3. Write linear equations from context in point-slope form.

Slope of a Line

Example 1: What is the slope between the two points (x_1, y_1) and (x_2, y_2) ?

Point – Slope Form of a Linear Equation

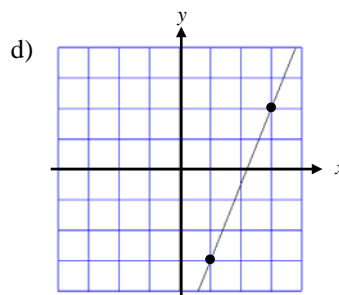
In order to write the equation of a line, all you need is one point, (x_1, y_1) , that is on the line and the slope, m . The **point – slope form** of a linear equation is

Example 2: For each of the following, write the equation of the line with the given information in point-slope form.

a) Point $(1, -3)$; Slope = $-\frac{2}{3}$

b) Point $(-12, 65)$; Slope = 18

c) Points $(12, -2)$ and $(6, 3)$ are on the line.



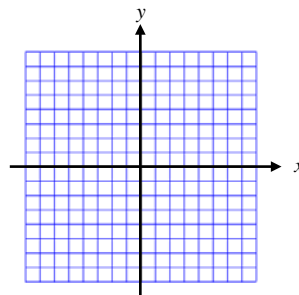
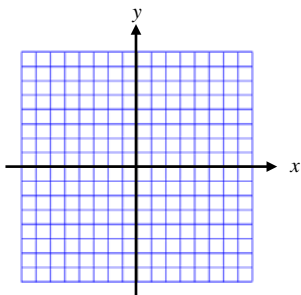
Example 3: State the point and slope used in each of the following equations.

a) $y - 4 = 2(x + 1)$

b) $y - \frac{1}{2} = -4(x - 8)$

c) $y + \frac{2}{3} = -\frac{1}{2}(x + \frac{5}{8})$

Example 4: Graph equation a from each of the last two examples.



Function Form: The point-slope equation we are using is NOT written in function form. An equation is written in **function form** when you have solved the equation for one variable. If we solve the point-slope equation we have been using for y, we would say that

“y is _____ x”.

