

Name: _____

Date: _____

Day 6: Writing a Linear Equation Given 2 Points

7/8A

Aim: How can we write a linear equation when given information about the line?

Recall: Write an equation for the given slope and y-intercept:

$$m = \frac{3}{4}$$

$$b = (0, -5)$$

Steps for Writing the Equation of a Line:

1. Check if the slope is given. If it's not, compute the average rate of change (slope) using the slope formula and 2 coordinates
2. Identify the y-intercept
 - a. If the y-intercept is not given, plug the coordinate into the equation and solve for "b"
3. Write the equation using the slope-intercept form ($y = mx + b$)

Example 1: Write the equation of a line that goes through (2, 10) and has a slope of $\frac{1}{2}$.

Example 2: Write the equation of a line that goes through (2, 2) and has a slope of -5.

Example 3: Write the equation of a line that passes through the points (5, 9) and (-1, 3).

Example 4: Write the linear equation for each table below.

x	2	3	4	5	6
y	-11	-14	-17	-20	-23

Example 5: Write the equation of a line that passes through the points (0, 13) and (4, 5).

Example 6: Write the linear equation for each table below.

x	1	2	3	4	5
y	1	3	5	7	9

On your own!

1. Write the equation of a line that has the following information.

a) $m = 2$ $b = (0, -7)$	b) $m = \frac{2}{3}$ and passes through the point $(-9, 1)$
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2. Write the equation of a line that passes through the points $(-5, -4)$ and $(1, 8)$.

3. Write the equation of a line that passes through the points $(0, 8)$ and $(-3, 10)$.

4. Write the equation of a line that passes through the points $(9, -15)$ and $(10, -18)$.

5. Write the equation of a line that passes through the points $(7, 8)$ and $(-3, 18)$.