

Name: _____

Block: _____

Writing Linear Equations – Point and Slope

The Slope-Intercept Form of a Line:

$$y = mx + b$$

1. In the equation above, what does the variable m stand for?

What does the variable b stand for?

2. Write the equation of the line, in $y = mx + b$ form, for each of the following:
 - a. A line with a slope of $\frac{2}{3}$ and a y-intercept of 9:
 - b. A line with a slope of 6 and a y-intercept of 3:
 - c. A line with a slope of -7 and a y-intercept of 0:
 - d. A line with a slope of 0 and a y-intercept of 2:

3. Write the slope-intercept form of the equation of the line passing through the point $(1, 8)$ with a slope of 3.

a. What does m equal?

b. What does b equal? (hint: use the equation and some algebra!)

c. Write the equation of the line:

4. Write the slope-intercept form of the equation of the line passing through the point $(1, -4)$ with a slope of -2.

a. What does m equal?

b. What does b equal?

c. Write the equation of the line:

5. Write the slope-intercept form of the equation of the line that goes through point $(3, 0)$ and has a slope of $\frac{2}{3}$.

6. Write the slope-intercept form of the equation of the line that goes through the point $(-1, 9)$ and has a slope of -3 .

7. Write the slope-intercept form of the equation of the line through the given point with the given slope:

a. through: (1,2), slope=7

b. through: (3,-1), slope = -1

c. through: (-2,5), slope= -4

d. through: (3,5), slope= $\frac{5}{3}$

e. through: (3, 1), slope= $\frac{1}{2}$