# Writing Linear Equations – Two Points

When a line passes through two points (x_1, y_1) and (x_2, y_2), the slope of the line is:

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

1. What is the slope-intercept form of a line?

    a. In slope-intercept form, what does the variable **m** stand for?

    b. In slope-intercept form, what does the variable **b** stand for?

2. Write the slope-intercept form of the equation of the line that goes though points (-2, -1) and (1, 8).

    a. Find the slope (use the equation!):

    b. Find the y-intercept:

    c. Write the equation:

3. In the coordinate plane below:

a. plot the points (-2, -1) and (1, 8)
b. draw a line through the points (use a ruler to make sure that your line is straight)
c. calculate the slope of the line
d. determine the y-intercept of the line
e. write the equation of the line in slope-intercept form

f. compare your answer to question 2 – did you get the same equation?

y-axis

x-axis
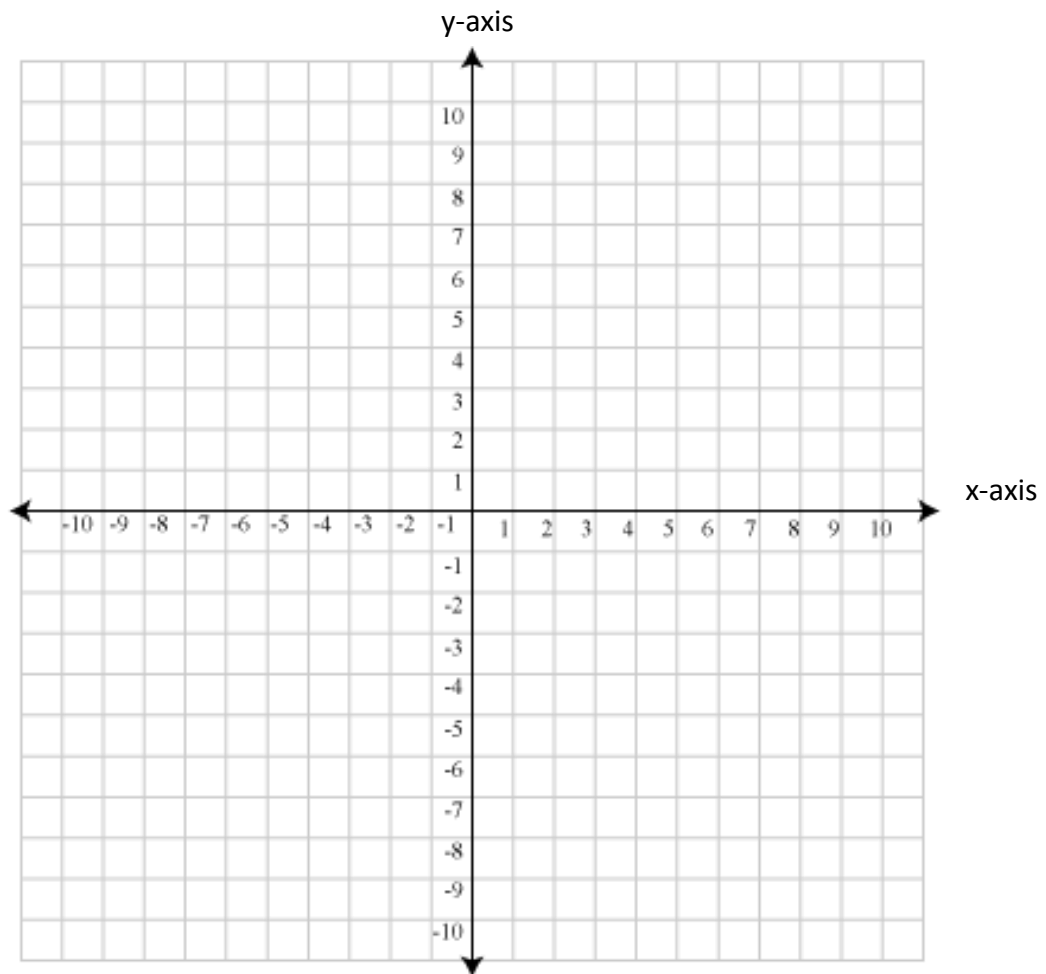
4. Write the slope-intercept form of the equation of the line that goes though points (-4, -1) and (2, 2).

      a. Find the slope:

      b. Find the y-intercept:

      c. Write the equation:

5. Write the slope-intercept form of the equation of the line that goes though points (2, -3) and (-3, 7).

      a. Find the slope:

      b. Find the y-intercept:

      c. Write the equation:

6. Write the slope-intercept form of the equation of the line that passes through the given points:

       a. (0, -5) and (3, 4)

       b. (2, 4) and (1, -2)

       c. (2, -2) and (-4, 1)

       d. (2, 3) and (-8, 0)

       e. (1, 6) and (5, 6)