

Objectives: write an equation for a line in slope-intercept form given two points on the line

TO WRITE AN EQUATION FOR A LINE IN SLOPE-INTERCEPT FORM  
GIVEN TWO POINTS ON THE LINE:

1. Find the slope  $m$  of the line.  $m =$  \_\_\_\_\_
2. Using the equation  $y = mx + b$ , substitute the slope  $m$  and one of the given points  $(x, y)$  to solve for  $b$ .
3. Write the slope-intercept form of the equation replacing  $m$  and  $b$ .
4. Check your work. The equation should be true using both ordered pairs.

Example 1

Write an equation in slope-intercept form for the line containing the points  $(2, 4)$  and  $(5, 7)$ .

Step 1. Find the slope.

Step 2. Substitute  $m$  and an  $(x, y)$  to solve for  $b$ .

Step 3. Write the equation in slope-intercept form. \_\_\_\_\_

Step 4. Check your work.

### Example 2

Write an equation in slope-intercept form for the line containing the points  $(-1, 4)$  and  $(1, 5)$ .

Step 1. Find the slope.

Step 2. Substitute  $m$  and an  $(x, y)$  to solve for  $b$ .

Step 3. Write the equation in slope-intercept form. \_\_\_\_\_

Step 4. Check your work.

### Example 3

Write an equation in slope-intercept form for the line containing the points  $(5, 5)$  and  $(8, 7)$ .

Step 1. Find the slope.

Step 2. Substitute  $m$  and an  $(x, y)$  to solve for  $b$ .

Step 3. Write the equation in slope-intercept form. \_\_\_\_\_

Step 4. Check your work.