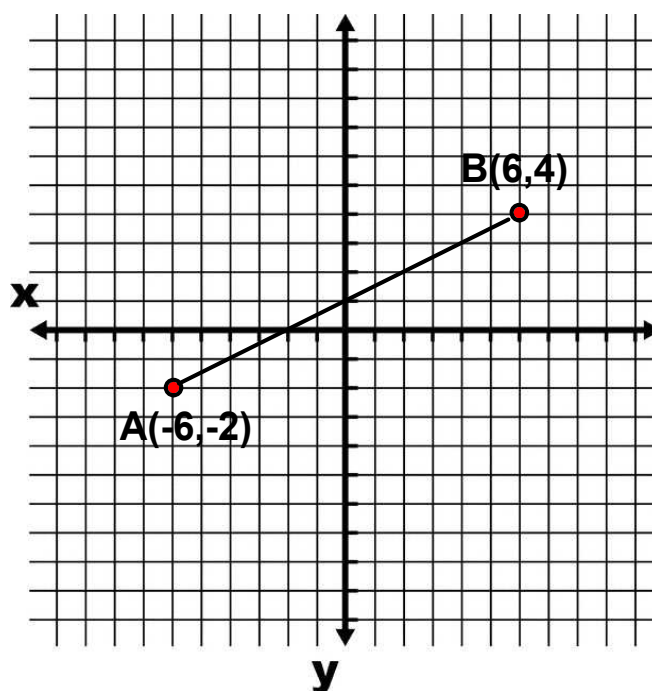


Writing Linear Equations

DO IT NOW

What is the slope of the line going through the points
A(8,7) and B(9,3):

Example 0: Find the equation of this line in slope y-intercept form:



How to write a linear equation in slope-intercept form when given two points on the line:

- 1.** Find the slope of the line using $m = \frac{y_2 - y_1}{x_2 - x_1}$
- 2.** Using the slope and one of the two points, sub values for m x and y into the equation $y=mx+b$
- 3.** Solve for the y-intercept (b -value)
- 4.** Using the slope and y-intercept, write the equation of the line in the form $y = mx+b$

Linear equations (day 2)

Example 1: Find the equation of the line through the points $(-3,2)$ and $(0,-1)$

Example 2: Find the equation of the line through the points $(5,3)$ and $(-2,4)$

How to write the equation of a line given one point on the line, and a line with a parallel slope:

- 1.** Find your slope from the parallel line (the slopes will be equivalent)
- 2.** Using the parallel slope and the given point on the line, sub in values for m x and y into the equation $y=mx+b$
- 3.** Solve for the y -intercept (b -value)
- 4.** Using the slope and y -intercept write the equation of the line in the form $y=mx+b$

Example 3: Write the equation of the line that goes through $(5,1)$ and parallel to $y=2x-3$

Example 4: Write the equation of the line that goes through $(-2,4)$ and parallel to $y = -\frac{3}{2}x + 3$

How to write the equation of a line given one point on the line, and a line with a perpendicular slope:

- 1.** Find your slope from the perpendicular line (the slopes will be **negative reciprocals**)
- 2.** Using the slope and the given point on the line, sub in values for m x and y into the equation $y=mx+b$
- 3.** Solve for the y -intercept (b -value)
- 4.** Using the slope and y -intercept write the equation of the line in the form $y=mx+b$

Linear equations (day 2)

Let's Practise Finding Perpendicular Slopes

Note: to find the perpendicular slope, you must invert the fraction, and change the sign of the fraction (flip and change the sign)

a) $m = -1/2$

b) $m = 5$

c)

Example 5: Write the equation of the line that goes through $(-2,5)$ and perpendicular to $y = -\frac{1}{4}x + 5$

Example 6: Write the equation of the line that goes through $(-3,-3)$ and perpendicular to $y = 2x + 3$

Complete the worksheet for tomorrow

Linear equations (day 2)

