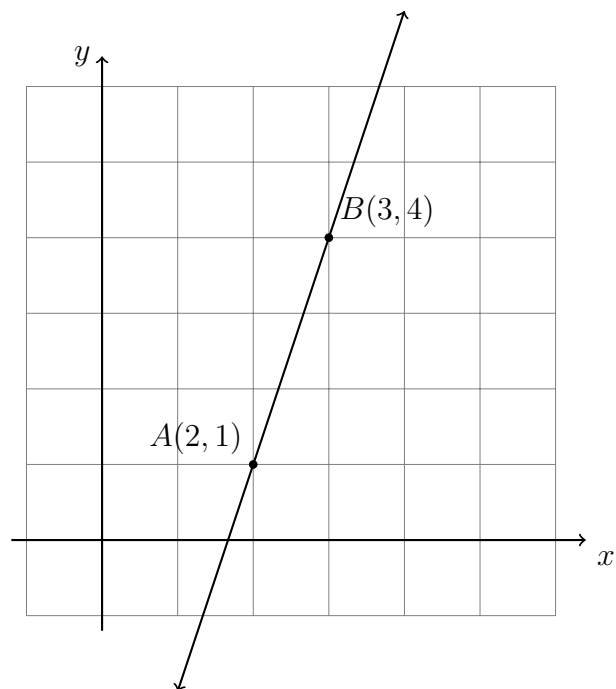


6.3 Slope formula

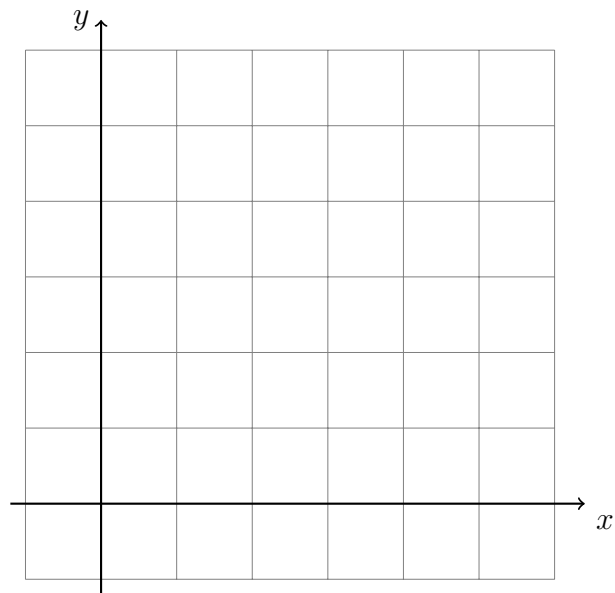
1. Find the slope of the line \overleftrightarrow{AB} , $A(2, 1)$, $B(3, 4)$. Use the formula and show the substitution step.

$$m = \frac{y_B - y_A}{x_B - x_A}$$



2. Plot the points and find the slope of the line \overleftrightarrow{RS} , $R(1, 3)$, $S(3, 4)$. Use the formula and show the substitution step. As a check, draw the line and count the rise and run.

$$m = \frac{y_S - y_R}{x_S - x_R}$$



3. Find the equation of the given line \overleftrightarrow{AB} , $A(0, 4)$, $B(4, 2)$.

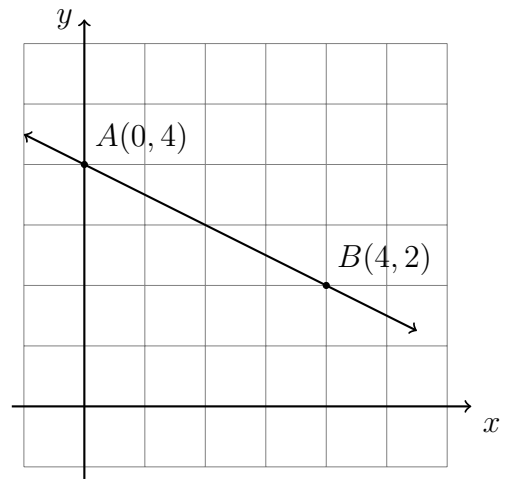
- (a) Find the slope, m , showing the substitution step in the slope formula:

$$m = \frac{y_B - y_A}{x_B - x_A}$$

- (b) Write down the y -intercept.

- (c) Write the equation of the line in the slope-intercept form

$$y = mx + b$$



4. Complete each statement about linear equations.

(a) What is the slope of a horizontal line?

(b) What is the y -intercept of the line $y = 2x + 3$?

(c) What is the slope of the line $y = x - 5$?

(d) Which has an undefined slope, a vertical or horizontal line?

(e) What is the y -intercept of the line $y = -2x$?

5. Two parallel lines are shown in the graph, p and q .

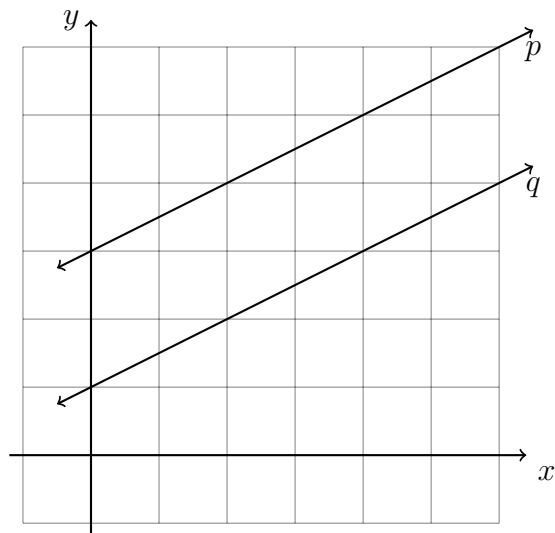
- (a) Find the slope, m , by counting squares across and up on the line.

$$m = \frac{\text{rise}}{\text{run}}$$

- (b) True or false: parallel lines have equal slopes.

- (c) Write the slope of a line perpendicular to p (the negative reciprocal).

$$m_{\perp} =$$



6. Write down the slope perpendicular to each slope (its negative reciprocal).

(a) If $m = 2$ then $m_{\perp} =$

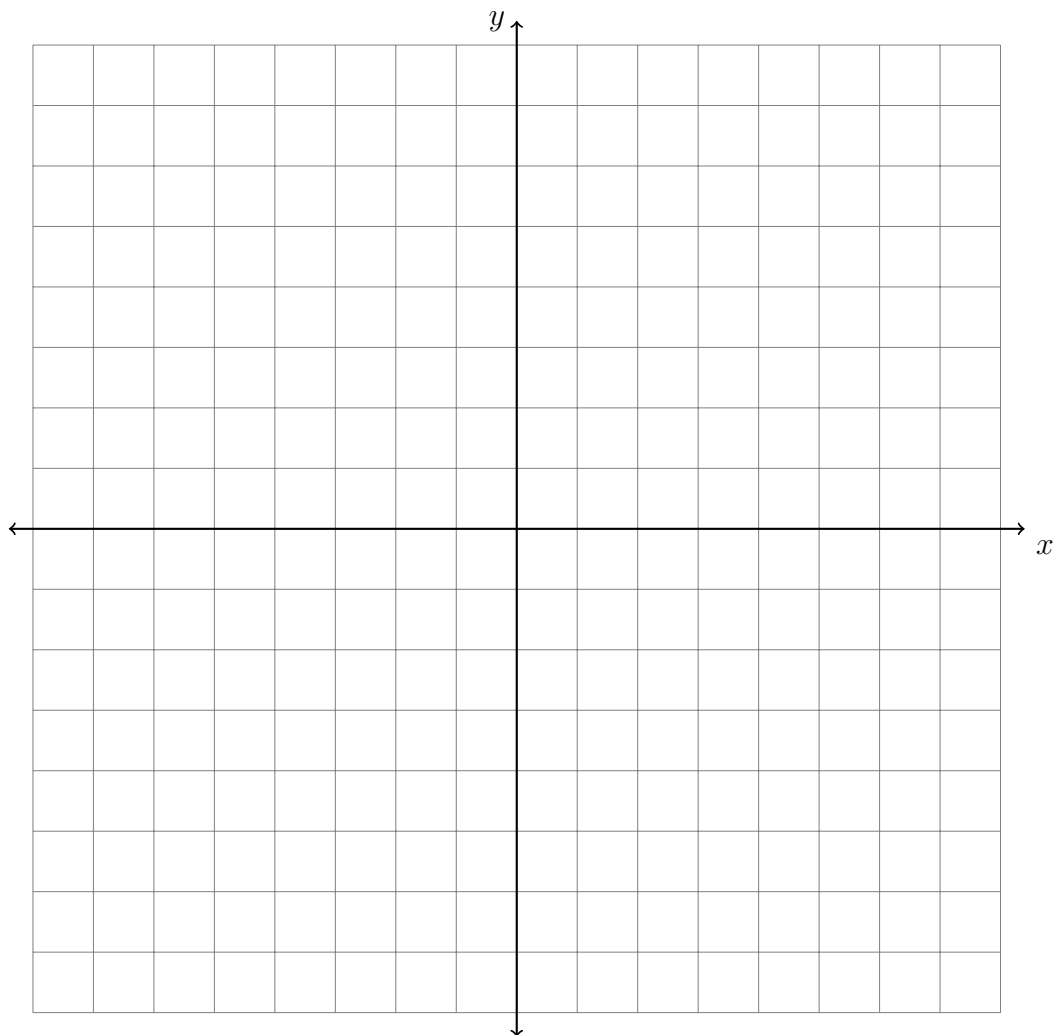
(b) If $m = -3$ then $m_{\perp} =$

(c) If $m = \frac{2}{3}$ then $m_{\perp} =$

(d) If $m = -\frac{3}{4}$ then $m_{\perp} =$

7. Plot the $\triangle ABC$ with vertices $A(2, 2)$, $B(5, 1)$, and $C(6, 4)$.

Find the slopes of \overleftrightarrow{AB} and \overleftrightarrow{AC} . Is the triangle a right triangle?



8. Plot the same triangle as problem 7 using Geogebra/classic. Paste an image of your work in this Classkick slide using the “camera” tool.

Spicy: measure the slopes of the relevant triangle sides and the measure of $\angle B$