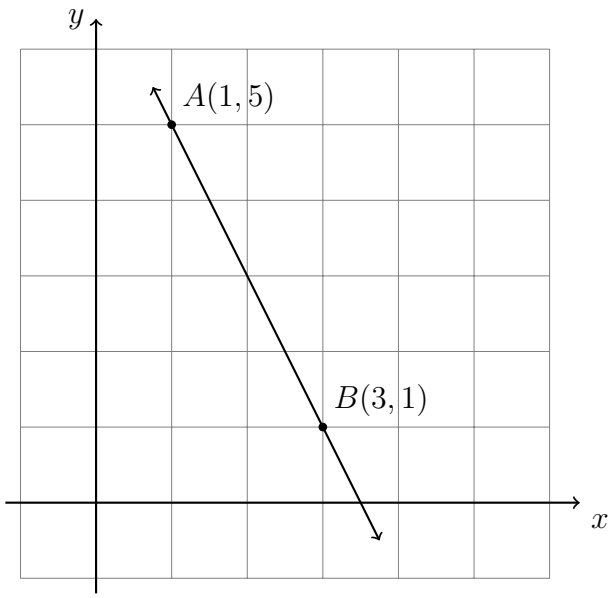
6.4 Prequiz

1. Do Now: Use the Graspable Math algebra calculator to substitute and simplify. Show your work in this slide by
   (a) Copy / paste an image (on a Mac, Command-Control-Shift 4 to copy to the clipboard), or
   (b) Use the camera tool to upload from your Desktop (Command-Shift 4 on a Mac)

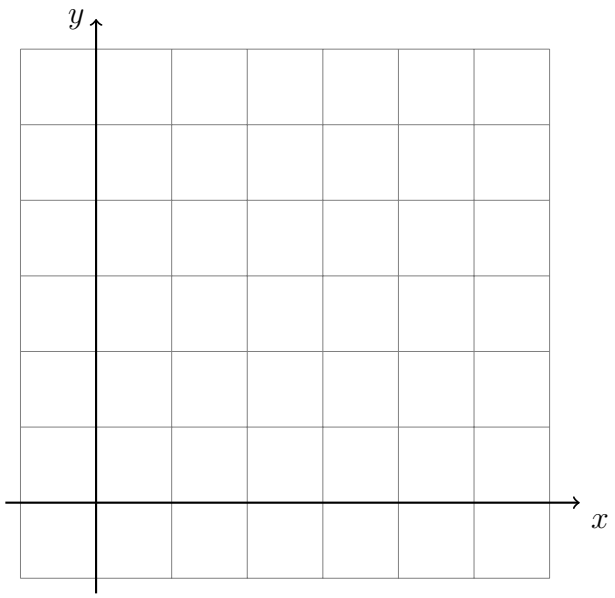
2. Find the slope of the line $\overleftrightarrow{AB}$, $A(1,5)$, $B(3,1)$. Use the formula and show the substitution step.

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



3. Plot the points and find the slope of the line $\overleftrightarrow{RS}$, $R(1,2)$, $S(4,5)$. Use the formula and show the substitution step. As a check, draw the line and count the rise and run.

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



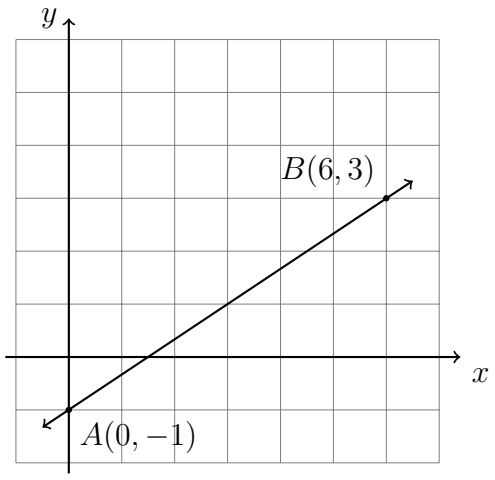
4. Find the equation of the given line $\overleftrightarrow{AB}$, $A(0,-1)$, $B(6,3)$.

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

$m = (y_B - y_A)/(x_B - x_A)$

(b) Write down the y-intercept.

(c) Write the equation of the line.



5. Complete each statement about linear equations.

   (a) What is the slope of the line $y = 2x + 3$?

   (b) Which has an zero slope, a vertical or horizontal line?

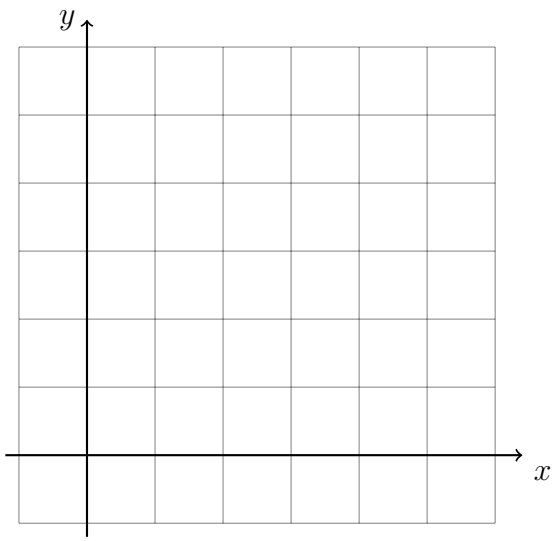
   (c) What is the y-intercept of the line $y = \frac{1}{2}x$?

   (d) What is the slope of a vertical line?

   (e) What is the slope of the line $y = -x + 3$?

6. Is the point $C(3,1)$ on the line $l : y = -\frac{3}{2}x + 5$?

   Support your answer with *both* algebra (substitute C's coordinates into the equation) and geometry by graphing the line and point C.

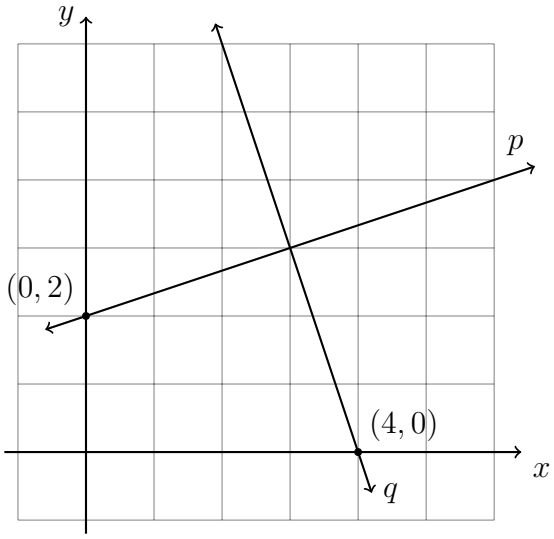


7. Two perpendicular lines are shown in the graph, p and q. Line p has a slope of $m = \frac{1}{3}$ and a y-intercept $b = 2$.

   (a) Write down the equation of line p.

   (b) What is the slope of line q, $m_\perp$?

   (c) Spicy: Line q crosses the x-axis at $(4, 0)$. What is its y-intercept?



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

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

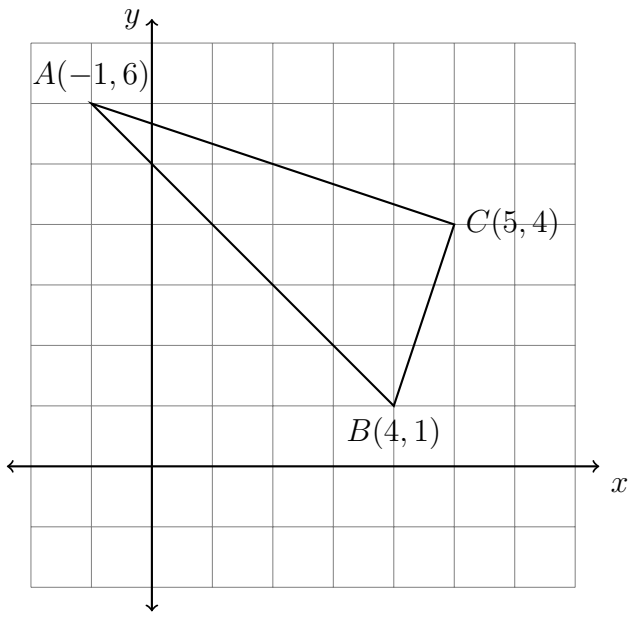
   (b) If $m = -\dfrac{5}{4}$ then $m_\perp =$

   (c) If $m = 1$ then $m_\perp =$

   (d) If $m = \dfrac{3}{1}$ then $m_\perp =$

9. $\triangle ABC$ with vertices $A(-1, 6)$, $B(4, 1)$, and $C(5, 4)$ is shown.

Find the slopes of $\overleftrightarrow{AC}$ and $\overleftrightarrow{BC}$. Is the triangle a right triangle? Justify your answer.



10. Plot a right triangle using Geogebra/classic (use the grid). Paste an image of your work in this Classkick slide from the clipboard or by using the "camera" tool.

    Spicy: Show the measures the slopes of the triangle legs and the measure of the right angle.