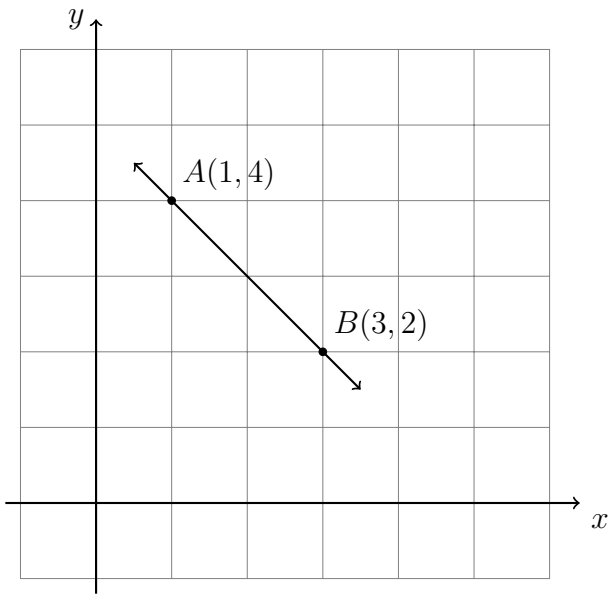
6.5 Quiz

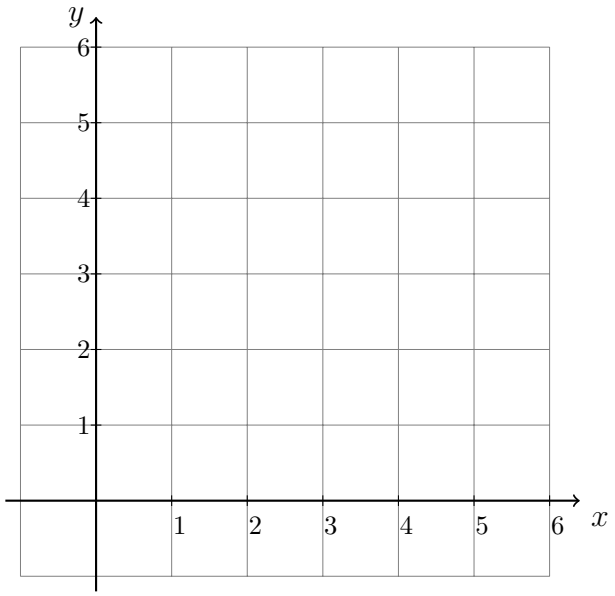
1. Find the slope of the line $\overleftrightarrow{AB}$, $A(1,4)$, $B(3,2)$. Use the formula and show the substitution step.

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

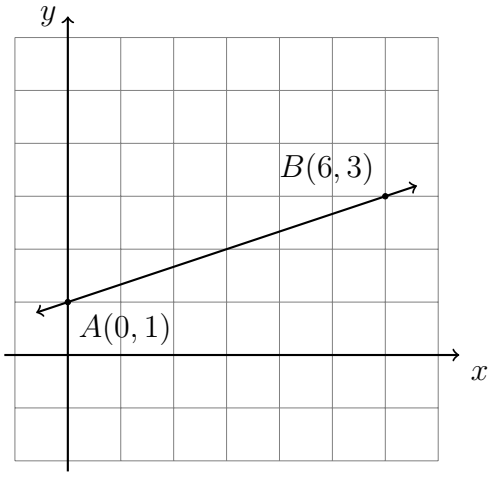


2. Plot the points and find the slope of the line $\overleftrightarrow{RS}$, $R(3,1)$, $S(5,5)$. Use the formula and show the substitution step. As a check, draw the line and count the rise and run.

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



3. 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.

4. Complete each statement about linear equations.

   (a) What is the y-intercept of the line $y = 3x - 1$?

   (b) What is the slope of the line $y = x + 13$?

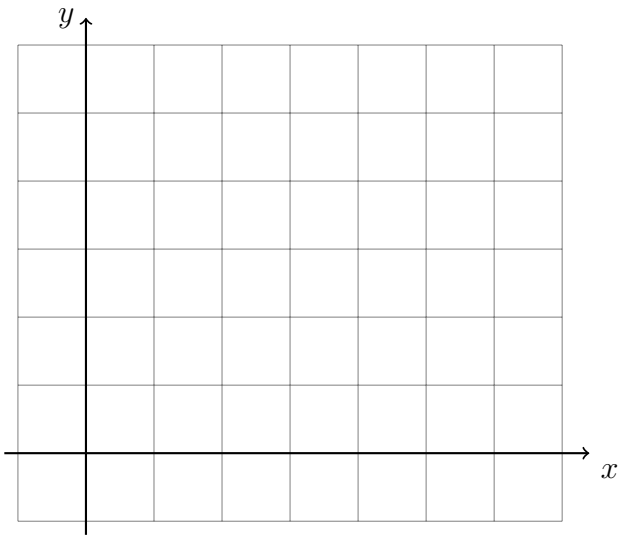
   (c) Which has an undefined slope, a vertical or horizontal line?

   (d) What is the y-intercept of the line $y = \frac{5}{2}x$?

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

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

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



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

   (a) If $m = -5$ then $m_\perp =$

   (b) If $m = \dfrac{3}{4}$ then $m_\perp =$

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

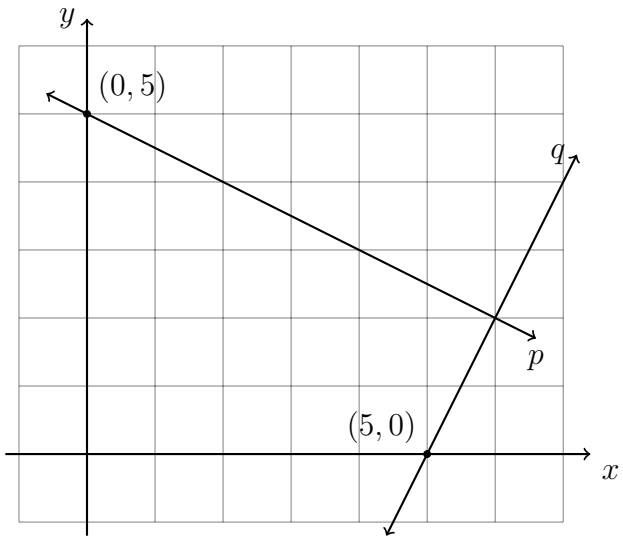
   (d) If $m = \dfrac{1}{7}$ then $m_\perp =$

7. Two perpendicular lines are shown in the graph, p and q. Line p has a slope of $m = -\frac{1}{2}$ and a y-intercept $b = 5$.

   (a) Write down the equation of line p.

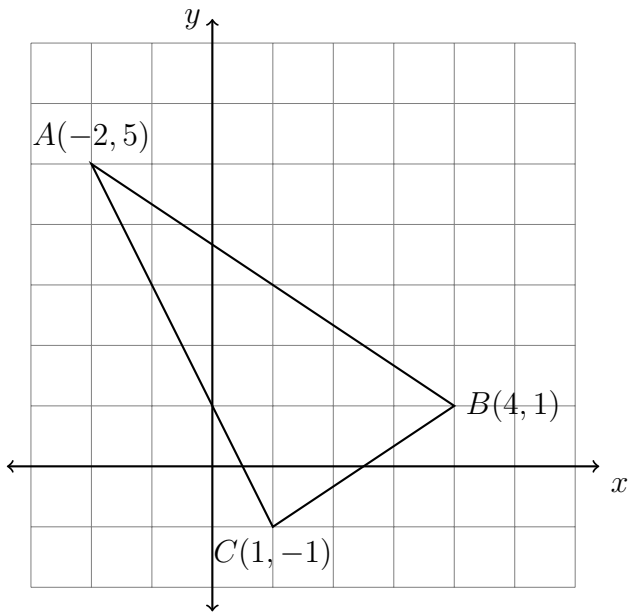
   (b) What is the slope of line q, $m_\perp$?

   (c) Spicy: Line q crosses the x-axis at $(5, 0)$. What is its y-intercept?



8. $\triangle ABC$ with vertices $A(2,5)$, $B(4,1)$, and $C(1,-1)$ is shown.

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



9. Plot a right triangle using Geogebra (use the grid). The legs must not be horizontal or vertical. 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.