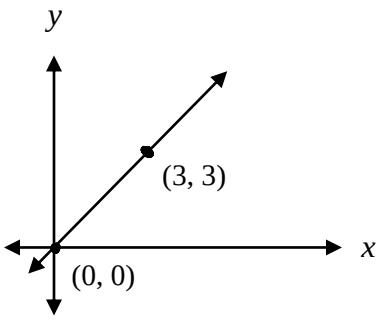
The Slope of a Line - Answers

Problems. Find the slope of each line.

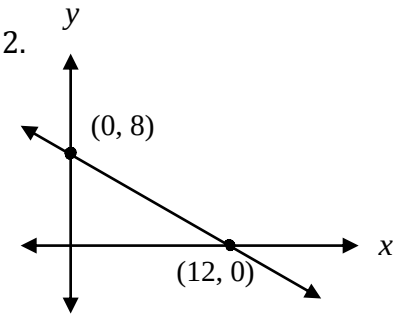
1.



$(x_1, y_1) = (0,0)$
$(x_2, y_2) = (3,3)$

$$\frac{y_2-y_1}{x_2-x_1} = \frac{3-0}{3-0} = \frac{3}{3} = \mathbf{1}$$

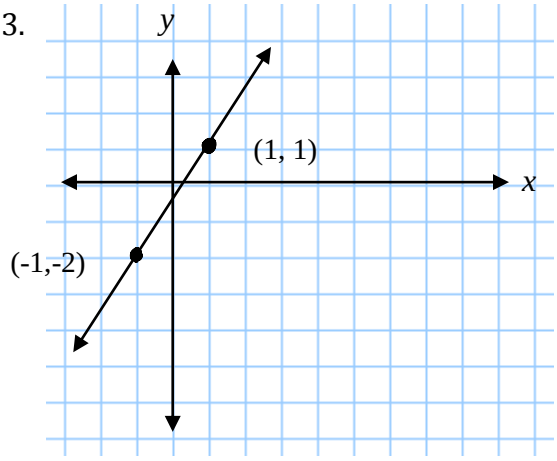
2.



$(x_1, y_1) = (0,8)$
$(x_2, y_2) = (12,0)$

$$\frac{y_2-y_1}{x_2-x_1} = \frac{0-8}{12-0} = \frac{-8}{12} = -\frac{\mathbf{2}}{\mathbf{3}}$$

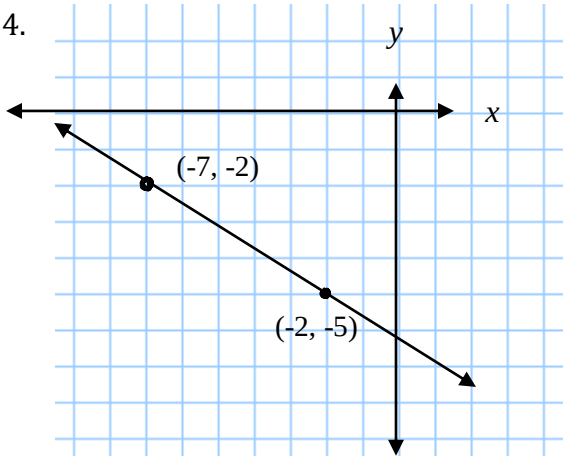
3.



$(x_1, y_1) = (1, 1)$
$(x_2, y_2) = (-1, -2)$

$$\frac{y_2-y_1}{x_2-x_1} = \frac{-2-1}{-1-1} = \frac{-3}{-2} = \frac{\mathbf{3}}{\mathbf{2}}$$

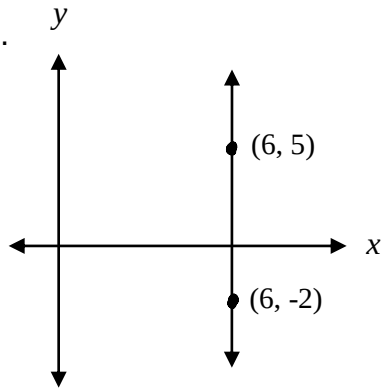
4.



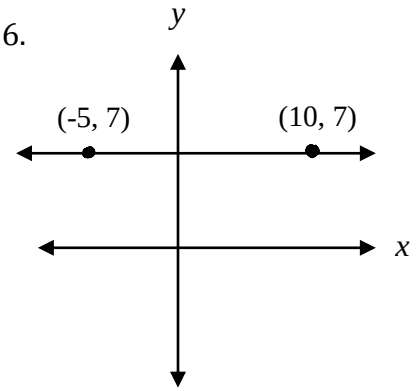
$(x_1, y_1) = (-7, -2)$
$(x_2, y_2) = (-2, -5)$

$$\frac{y_2-y_1}{x_2-x_1} = \frac{-5-(-2)}{-2-(-7)} = \frac{-3}{5} = -\frac{\mathbf{3}}{\mathbf{5}}$$

5.



6.



$(x_1, y_1) = (6, 5)$
$(x_2, y_2) = (6,-2)$

$$\frac{y_2-y_1}{x_2-x_1} = \frac{-2-5}{6-6} = \frac{-7}{0}$$

Undefined
(you cannot have a denom. of 0)

$(x_1, y_1) = (-5, 7)$
$(x_2, y_2) = (10, 7)$

$$\frac{y_2-y_1}{x_2-x_1} = \frac{7-7}{10-(-5)} = \frac{0}{15} = \mathbf{0}$$

(0 divided by anything is 0)

7. Find the slope of a line parallel to the line in problem 2.

Slope of line in problem 2: $-\frac{2}{3}$

Slope of a line parallel to the line in problem 2**:** $\mathbf{-\frac{2}{3}}$

8. Find the slope of a line perpendicular to the line in problem 2.

Slope of line in problem 2: $-\frac{2}{3}$

Slope of a line perpendicular to the line in problem 2: $\mathbf{\frac{3}{2}}$