

Modeling Activity

(Use with Lesson 6-6)

Slope of Perpendicular Lines

Materials: rectangular piece of paper (sheet of paper 8 1/2" x 11")

There is a special relationship between the slopes of perpendicular lines.

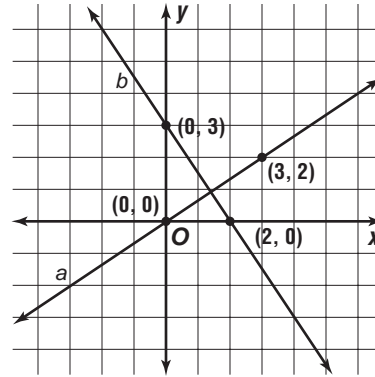
Activity: Determine if the lines are perpendicular. If so, find the slope of each line.

► Use the corner of a piece of paper to determine that the lines are perpendicular.

► Find the slope of each line.

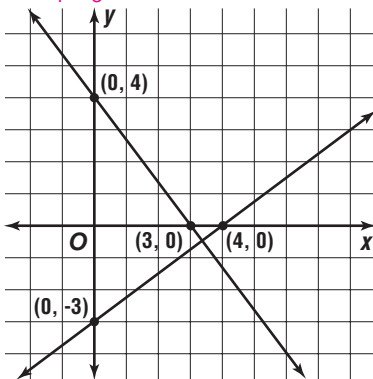
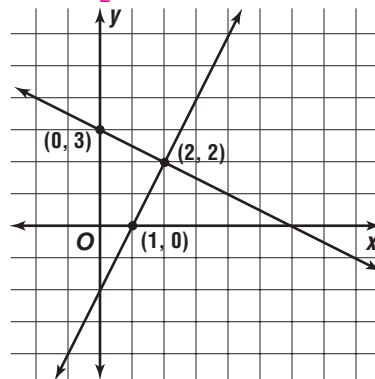
$$\text{Line } a \quad m = \frac{2 - 0}{3 - 0} = \frac{2}{3}$$

$$\text{Line } b \quad m = \frac{3 - 0}{0 - 2} = -\frac{3}{2}$$

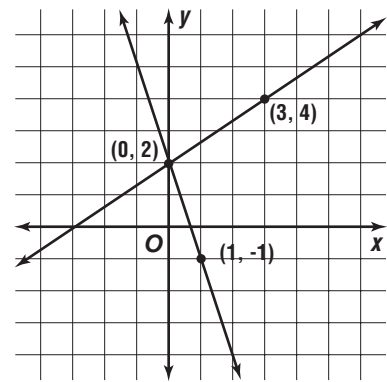


INVESTIGATE

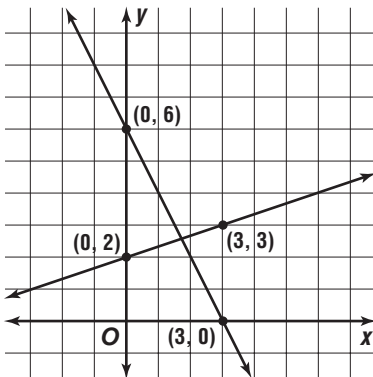
Determine if the pairs of lines are perpendicular. If so, find the slopes of the lines.

1. yes; $\frac{3}{4}$, $-\frac{4}{3}$ 2. yes; 2, $-\frac{1}{2}$ 

3. no

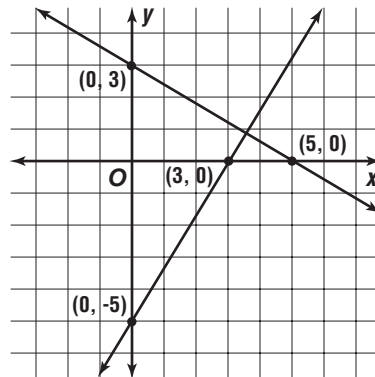


4.

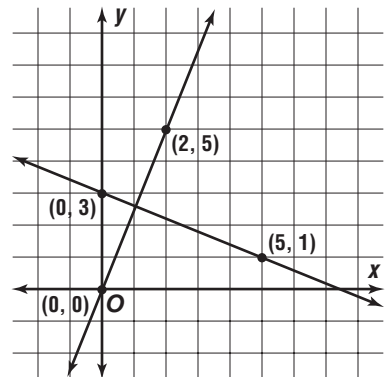


no

5.

yes; $\frac{5}{3}$, $-\frac{3}{5}$

6.

yes; $\frac{5}{2}$, $-\frac{2}{5}$

WRITE

7. Describe the relationship between the slopes of perpendicular lines.

Sample answer: The slopes of perpendicular lines are negative reciprocals of each other.