

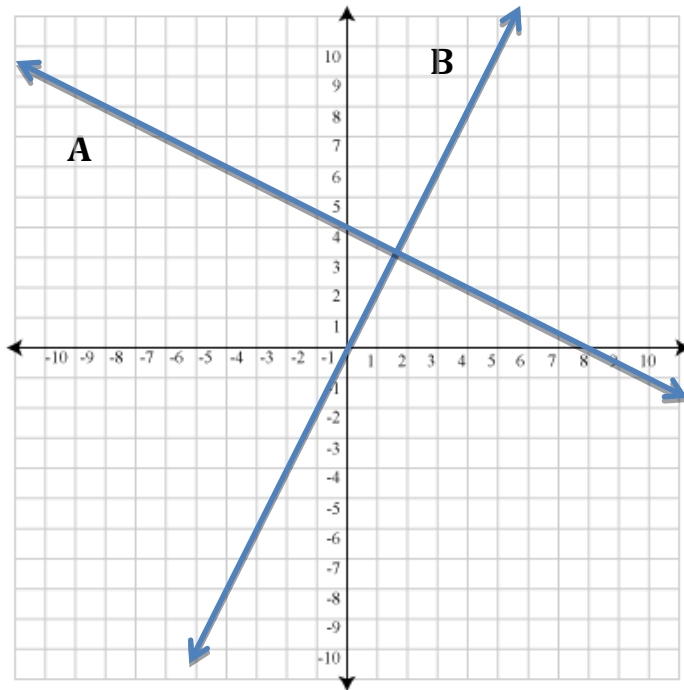
Name: \_\_\_\_\_

Block: \_\_\_\_\_

## Writing Linear Equations – Point and Perpendicular Line

**Perpendicular Lines:** Two lines that intersect at a  $90^\circ$  angle.

1. Lines A and B in the graph below are perpendicular.
  - a. What is the slope of line A?
  - b. What is the slope of line B?
  - c. What can be said about the slope of perpendicular lines?



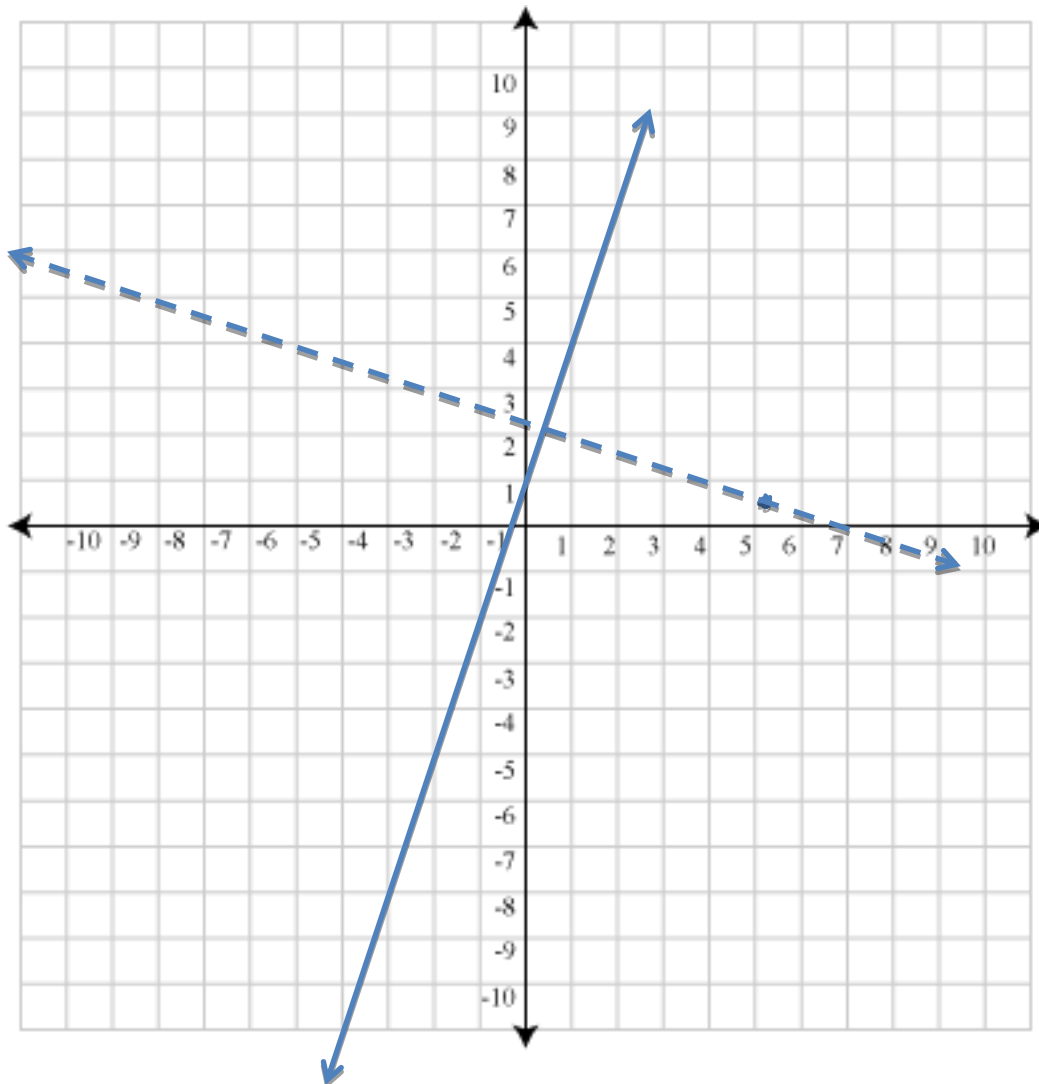
2. Line P and line R are perpendicular. The slope of line P is  $-8$ . What is the slope of line R?

3. Find the equation of a line that passes through the point  $(6, -2)$  and is perpendicular to the line  $y=3x$ . You may refer to the diagram below if you need help visualizing!

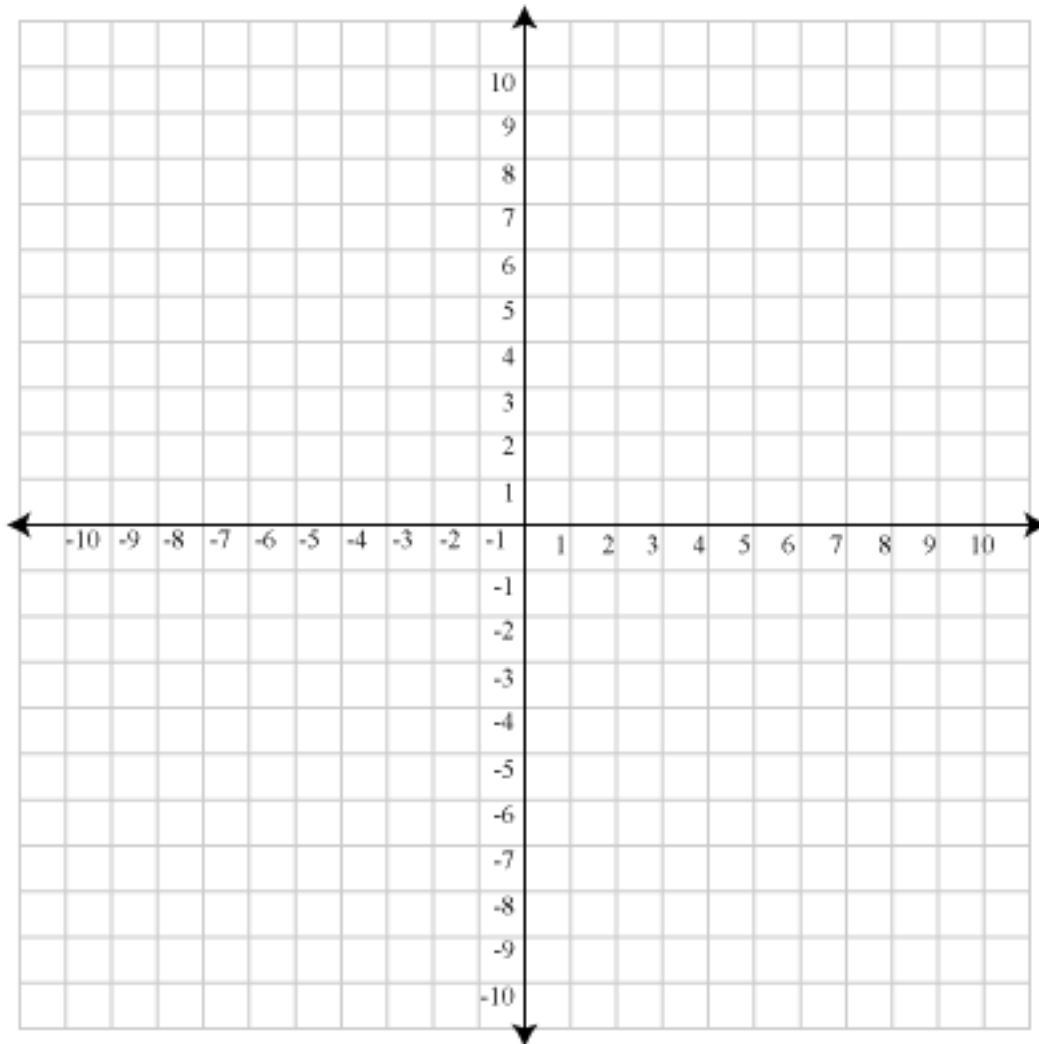
a. What is the slope of the line? (Hint: What do we know about slopes of perpendicular lines?)

b. Find the y-intercept of the line.

c. Write the equation of the line.



4. Find the equation of a line that passes through the point  $(8, -2)$  and is perpendicular to the line  $y=x+1$ . (You may draw a picture below if you'd like to).
- What is the slope of the line?
  - Find the y-intercept of the line.
  - Write the equation of the line.



5. Find the equation of a line that passes through the point (6,7) and is perpendicular to the line  $y=3x+4$ .

a. What is the slope of the line?

b. Find the y-intercept of the line.

c. Write the equation of the line.

6. Find the equation of a line that passes through the point (-2, 0) and is perpendicular to the line  $y=-\frac{1}{2}x-5$ .

a. What is the slope of the line?

b. Find the y-intercept of the line.

c. Write the equation of the line.

7. Write the equation of the line that goes through the given point and runs perpendicular to the given line:

a. Through (10, 6), perpendicular to  $y = -5x + 2$

b. Through (6, 4), perpendicular to  $y = \frac{1}{2}x - 6$

c. Through (-4, 2), perpendicular to  $y = -\frac{1}{8}x + 2$

d. Through (4,4), perpendicular to  $y = -2x + 7$

e. Through (3,-4), perpendicular to  $y = 6x + 2$

f. Through (-3, 5), perpendicular to  $y = \frac{1}{3}x - 6$

