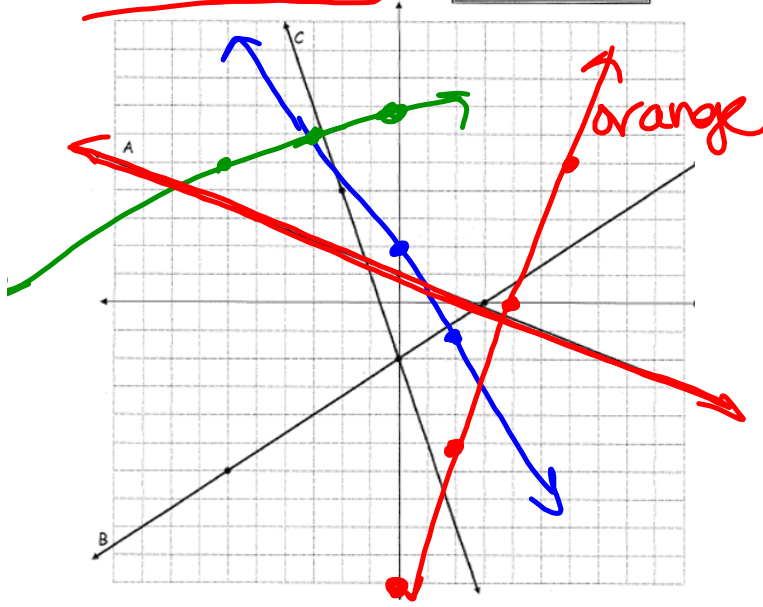


Directions: Graph the points and use a ruler to draw the line that passes through them. Use the designated color to draw each line.

- BLUE: (0, 2) (2, -1)
- PURPLE: (-3, 6) (-6, 5)
- ORANGE: (4, 0) (6, 5)

Given Lines and Their Points	
A:	(0, 1) (-5, 3)
B:	(3, 0) (-6, -6)
C:	(-2, 4) (0, -2)



The equation of Line A is $y = -\frac{2}{5}x + 1$.

The equation of Line B is $y = \frac{2}{3}x - 2$.

The equation of line C is $y = -3x - 2$.

homework

Directions: Use the points given to write the equation of each line in slope-intercept form.

BLUE LINE	* PURPLE LINE	* ORANGE LINE
$x \ y$ $(0 \ 2)$ $(2 \ -1)$ $m = -\frac{3}{2}$ $y = -\frac{3}{2}x + b$ $2 = -\frac{3}{2}(0) + b$ $2 = 0 + b$ $2 = b$ $y = -\frac{3}{2}x + 2$		
	$y = \frac{1}{3}x + 7$	$y = \frac{5}{2}x - 10$

Directions: Use your graph to help answer the following questions.

- Which colored line is perpendicular to line A? **orange**
 What are the equations of these 2 lines?
A: $y = -\frac{2}{5}x + 1$ ORANGE: $y = \frac{5}{2}x - 10$
- Which colored line is perpendicular to line B? **BLUE**
 What are the equations of these 2 lines?
B: $y = \frac{2}{3}x - 2$ BLUE: $y = -\frac{3}{2}x + 2$
- Which colored line is perpendicular to line C? **PURPLE**
 What are the equations of these 2 lines?
C: $y = -3x - 2$ PURPLE: $y = \frac{1}{3}x + 7$

Directions: Use the equations of each pair of perpendicular lines to answer the following questions.

4. What do you notice about the slopes in each pair of equations?

slopes are flipped & one is positive, one is negative

5. What do you notice about the y-intercepts of in each pair of equations?

y-intercepts are all different but they don't have to be.

6. What general statement can you make about the equations of perpendicular lines in relation to $y = mx + b$?

Slopes are negative reciprocals.

Directions: Answer the following the questions using the knowledge you gained from your investigation.

1. Are $y = 3x + 7$ and $y = 3x - 8$ perpendicular to each other? YES or NO

2. Are $y = \frac{2}{3}x - 2$ and $y = -\frac{3}{2}x + 1$ perpendicular to each other? YES or NO

3. Name 3 lines that are perpendicular to $y = 2x - 3$.

$y = -\frac{1}{2}x + 3$ $y = -\frac{1}{2}x - 2$

$y = -\frac{1}{2}x + 4$

4. Name 3 lines that are not perpendicular to $y = 5x - 2$

$y = 2x + \frac{1}{2}$

$y = \frac{1}{5}x - 3$