

Name: Key

Hour: \_\_\_\_\_

# ACC Linear Review

1. Find the slope of the line containing points A(8, -3) and B(-6, -2).

Use the formula:

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-2 - (-3)}{-6 - 8} = \frac{-2 + 3}{-6 - 8} = \frac{1}{-14}$$

$$m = -\frac{1}{14}$$

2. Determine if AB and CD are parallel, perpendicular, or neither.

a. A(-2, -5), B(4, 7), C(0, 2), D(8, -2)

Find the slopes of  $\overleftrightarrow{AB}$  and  $\overleftrightarrow{CD}$ .

$$\begin{aligned} \text{slope of } \overleftrightarrow{AB} &= \frac{7 - (-5)}{4 - (-2)} \\ &= \frac{12}{6} \text{ or } 2 \end{aligned}$$

$$\begin{aligned} \text{slope of } \overleftrightarrow{CD} &= \frac{-2 - 2}{8 - 0} \\ &= -\frac{4}{8} \text{ or } -\frac{1}{2} \end{aligned}$$

Ans: perpendicular because they are op. reciprocals.

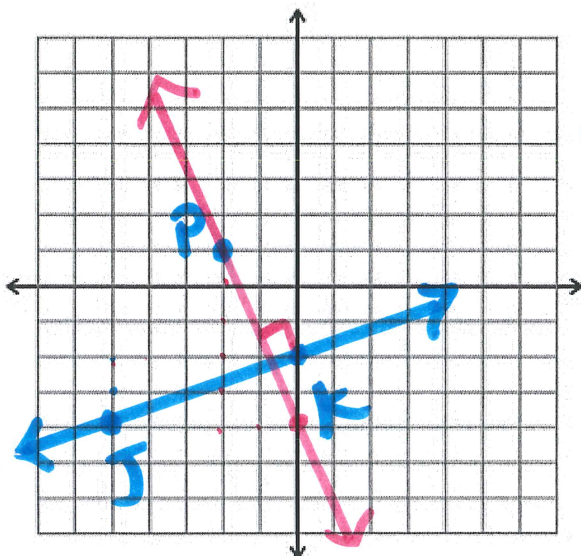
b. A(-8, -7), B(4, -4), C(-2, -5), D(1, 7)

$$\begin{aligned} \text{slope of } \overleftrightarrow{AB} &= \frac{-4 - (-7)}{4 - (-8)} \\ &= \frac{3}{12} \text{ or } \frac{1}{4} \end{aligned}$$

$$\begin{aligned} \text{slope of } \overleftrightarrow{CD} &= \frac{7 - (-5)}{1 - (-2)} \\ &= \frac{12}{3} \text{ or } 4 \end{aligned}$$

Ans: neither. (parallel would be the same slope)

3. Graph the line that contains P(-2, 1) and is perpendicular to  $\overline{JK}$  with J(-5, -4) and K(0, -2).



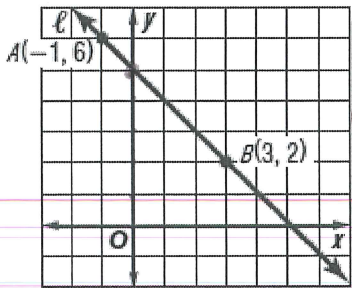
$$\begin{aligned} \text{slope } JK &= \frac{2}{5} \\ m_{\perp} &= -\frac{5}{2} \end{aligned}$$

4. Write an equation in slope-intercept form of the line with slope of  $-4$  and  $y$ -intercept of  $1$ .

$$y = mx + b$$

$$\boxed{y = -4x + 1}$$

5. Write the slope intercept form of line  $l$ .



$y$  int =  $(0, 5)$   $\rightarrow$  but you won't always be given a nice whole #.

① Find Slope  
 $\frac{2-6}{3-(-1)} = \frac{-4}{4} = -1$

② Find  $b$ .  $m = -1$   $(3, 2)$   
 ~~$y = mx + b$~~   
 $2 = -1(3) + b$   
 $2 = -3 + b$   
 $+3 \quad +3$   
 $5 = b$

$$\boxed{y = -1x + 5}$$

6. Write an equation in slope-intercept form for a line containing  $(2, 0)$  that is perpendicular to the line with equation  $y = -x + 5$ .

$$m = -1 \quad m_{\perp} = \frac{1}{-1} = 1$$

$$0 = 1(2) + b$$

$$-2 = b$$

$$\boxed{y = x - 2}$$

7. Write an equation in slope-intercept form for a line containing  $(-3, 6)$  that is parallel to the graph of  $y = -\frac{3}{4}x + 3$ .

$$m = -\frac{3}{4} \quad m_{\parallel} = -\frac{3}{4}$$

$$6 = -\frac{3}{4}(-3) + b$$

$$6 = \frac{9}{4} + b$$

$$\frac{24}{4} = \frac{9}{4} + b$$

$$-\frac{9}{4} \quad -\frac{9}{4}$$

$$\boxed{b = \frac{15}{4}}$$

$$\boxed{y = -\frac{3}{4}x + \frac{15}{4}}$$