

Name \_\_\_\_\_ Date \_\_\_\_\_

**Day 2 – Parallel and Perpendicular Lines**

**A. Determine whether the lines are parallel, perpendicular, or neither given the equations.**

1)  $6x - 12y = 24;$

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

$4x + 2y = 8$

$y = -2x + 4$

**Perpendicular**

2)  $4x + y = 5;$

$y = -4x + 5$

$3x + 12y = -6$

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

**Neither**

**B. Write the equation in slope intercept form of the line parallel and line perpendicular to given line through given point.**

3)  $y = 4x + 7$  through  $(-2, -9)$

**Parallel**

$y = 4x - 1$

$y = 4x + b$   
 $-9 = 4(-2) + b$   
 $-9 = -8 + b$   
 $b = -1$

**Perpendicular**

$y = -\frac{1}{4}x - \frac{19}{2}$

$y = -\frac{1}{4}x + b$   
 $-9 = -\frac{1}{4}(-2) + b$   
 $-9 = \frac{1}{2} + b$   
 $b = -19/2$

4)  $2x - 5y = 10$  through  $(3, -7)$

$\frac{-2x}{-5} = \frac{-2x + 10}{-5}$   
 $-\frac{5y}{-5} = \frac{-2x + 10}{-5}$   
 $y = \frac{2}{5}x - 2$

$y = \frac{2}{5}x - \frac{41}{5}$

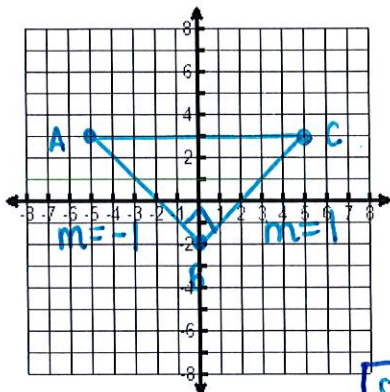
$y = \frac{2}{5}x + b$   
 $-7 = \frac{2}{5}(3) + b$   
 $-7 = \frac{6}{5} + b$   
 $b = -\frac{41}{5}$

$y = -\frac{5}{2}x + \frac{1}{2}$

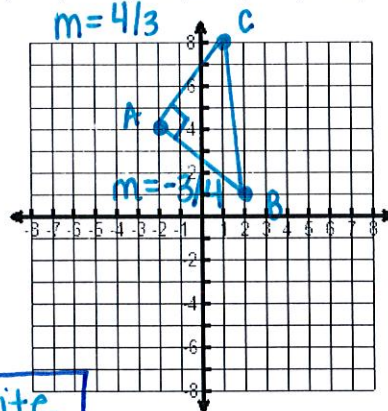
$y = -\frac{5}{2}x + b$   
 $-7 = -\frac{5}{2}(3) + b$   
 $-7 = -\frac{15}{2} + b$   
 $b = \frac{1}{2}$

**C. State whether the 3 points form a right triangle. If so, which angle is the right angle?**

5)  $A(-5, 3)$   $B(0, -2)$   $C(5, 3)$



6)  $A(-2, 4)$   $B(2, 1)$   $C(1, 8)$



**Slopes are opposite reciprocals, so yes.**