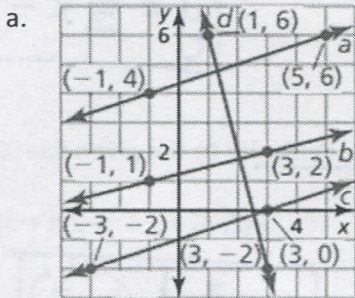


3.5 Equations of Parallel & Perpendicular Lines DAY ONE CYU

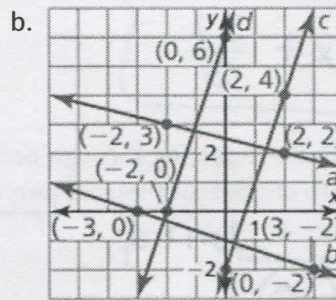
Use when you get it right all by yourself
S Use when you did it all by yourself, but made a silly mistake
H Use when you could do it alone with a little help from teacher or peer
G Use when you completed the problem in a group
X Use when a question was attempted but wrong (get help)
N Use when a question was not even attempted

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Parallel slopes	1	2	3
Perpendicular slopes	1	2	4
Counting slopes	1	2	
Using Slope Formula	2	2	
Writing Equations			3, 4
Graphing Equations		3, 4	

1. Determine which of the lines are parallel and which of the lines are perpendicular.



a//c
b⊥d



c//d
b⊥c
b⊥d

2. Determine whether the lines through the given points are parallel, perpendicular, or neither. Justify your answer.

a) Line 1: (1, 0) & (7, 4)

Line 2: (7, 0) & (3, 6)

⊥

$$\left(\frac{2}{3}\right)\left(-\frac{3}{2}\right) = -1 \checkmark$$

b) Line 1: (-3, 1) & (-7, -2)

Line 2: (2, -1) & (8, 4)

neither

$$\left(\frac{3}{4}\right)\left(\frac{5}{6}\right) \neq -1 \times$$

$$\frac{3}{4} \neq \frac{5}{6} \times$$

c) Line 1: (-9, 3) & (-5, 7)

Line 2: (-11, 6) & (-7, 2)

⊥

$$(1)(-1) = -1 \checkmark$$

d) Line 1: (10, 5) & (-8, 9)

Line 2: (2, -4) & (11, -6)

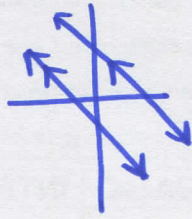
//

$$-\frac{2}{9} = -\frac{2}{9} \checkmark$$

3. Write an equation of the line passing through point P that is parallel to the given line. Graph the equations of the lines to check that they are parallel.

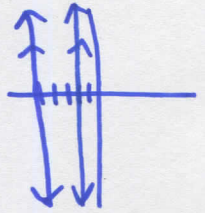
a. $P(0, -1), y = -2x + 3$ $//m = -2$

$y + 1 = -2(x - 0)$
or
 $y = -2x - 1$



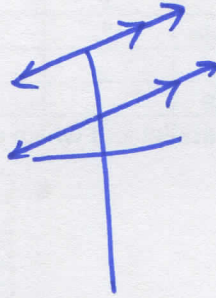
c. $P(-2, 6), x = -5$ $//m = \text{undefined}$

$x = -2$



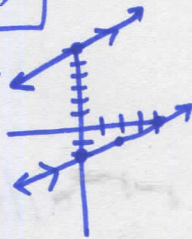
b. $P(3, 8), y = \frac{1}{5}(x + 4)$ $//m = \frac{1}{5}$

$y - 8 = \frac{1}{5}(x - 3)$
or
 $y = \frac{1}{5}x + \frac{37}{5}$



d. $P(4, 0), -x + 2y = 12$ $//m = \frac{1}{2}$

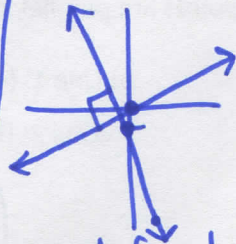
$y - 0 = \frac{1}{2}(x - 4)$
or
 $y = \frac{1}{2}x - 2$



4. Write an equation of the line passing through point P that is perpendicular to the given line. Graph the equations of the lines to check that they are perpendicular.

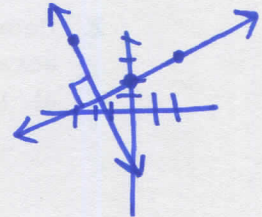
a. $P(0, 0), y = -9x - 1$ $\perp m = \frac{1}{9}$

$y - 0 = \frac{1}{9}(x - 0)$
or
 $y = \frac{1}{9}x$



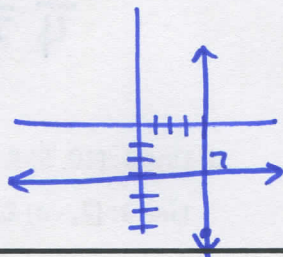
c. $P(2, 3), y - 4 = -2(x + 3)$ $\perp m = \frac{1}{2}$

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



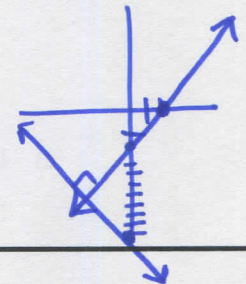
b. $P(4, -6), y = -3$ $\perp m = \text{undefined}$

$x = 4$



d. $P(-8, 0), 3x - 5y = 6$ $\perp m = -\frac{5}{3}$

$y - 0 = -\frac{5}{3}(x + 8)$
or
 $y = -\frac{5}{3}x - \frac{40}{3}$



CYU Reflection: How far can you go: basic, intermediate, or advanced?

Rate your mastery level!

How confident are you with the skills this CYU covered? Circle the score you would give yourself.

