

Math 127: Team Quiz 1

Name: KEY

1. Find the equation of the line which passes through the point (3, -2) and is perpendicular to the line $2x + y = 5$. Put the final equation into slope-intercept form.

"Find the equation of the line"

$$y - y_1 = m(x - x_1)$$

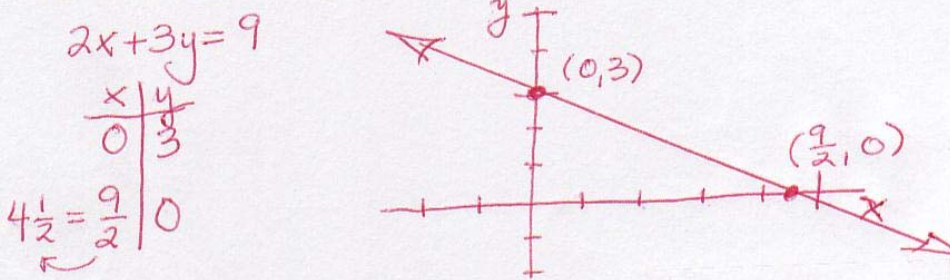
$$y - (-2) = \frac{1}{2}(x - 3)$$

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

$$y = \frac{1}{2}x - \frac{7}{2}$$

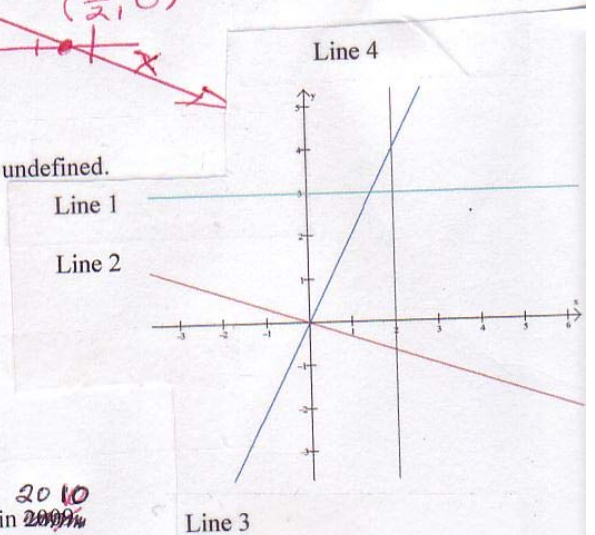
Slope: $2x + y = 5$
 $y = -2x + 5$
 perp line: $m = \frac{1}{2}$

2. Find the x-intercept and y-intercept and graph the line given by the equation $2x + 3y = 9$



3. Fill in the correct word from this list: zero, positive, negative, undefined.

- a) Line 1 has zero slope
 b) Line 2 has negative slope
 c) Line 3 has positive slope
 d) Line 4 has undefined slope



3. A car that was worth \$20,000 in 2006 was valued at \$12,000 in ~~2009~~ ²⁰¹⁰

(a) Let t = time in years since 2006 (i.e. $t = 0$ corresponds to 2006) and V = the value of the car. Put the data above into a t, V table and find the slope. Interpret the slope value in words (i.e., say what it means in terms of the value of the car).

t	V
0	20,000
4	12,000

$$m = \frac{12,000 - 20,000}{4 - 0} = \frac{-8,000}{4} = -2,000$$

(b) Find an equation that gives the value of the car in terms of time.

$$V - 20,000 = -2,000(t - 0)$$

$$V - 20,000 = -2,000t$$

$$V = -2,000t + 20,000$$

The car depreciates at \$2,000 per year.