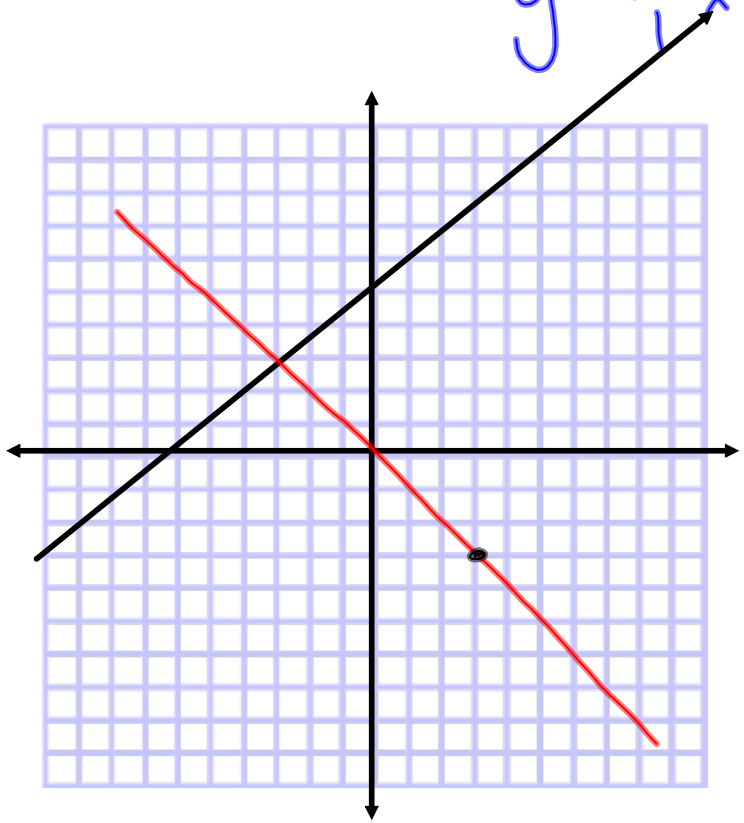
Homework 5.5:

(18) $(3, -3)$, $y = x + 5$

perpendicular

$y = \frac{-1}{1}x + b$ $\quad \frac{1}{1} \rightarrow \frac{-1}{1}$



$y = -x + b$

$-3 = -(3) + b$

$-3 = -3 + b$

$+3 \quad +3$

$0 = b$

$y = -x$

(23) $(-4, -1)$ $y = \frac{4}{3}x + 6$ (perp.)

$y = \frac{-3}{4}x + b$ $\frac{4}{3} \rightarrow -\frac{3}{4}$

$-1 = \frac{-3}{4}(-4) + b$

$-1 = 3 + b$

$-3 \quad -3$

$-4 = b$

$y = \frac{-3}{4}x - 4$

(28) $(2,3)$ $(6,1)$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{1-3}{6-2} = \frac{-2}{4} = \frac{-1}{2}$$

$y = \frac{-1}{2}x + b$ $(0,0)$

$0 = \frac{1}{2}(0) + b$

$0 = b$

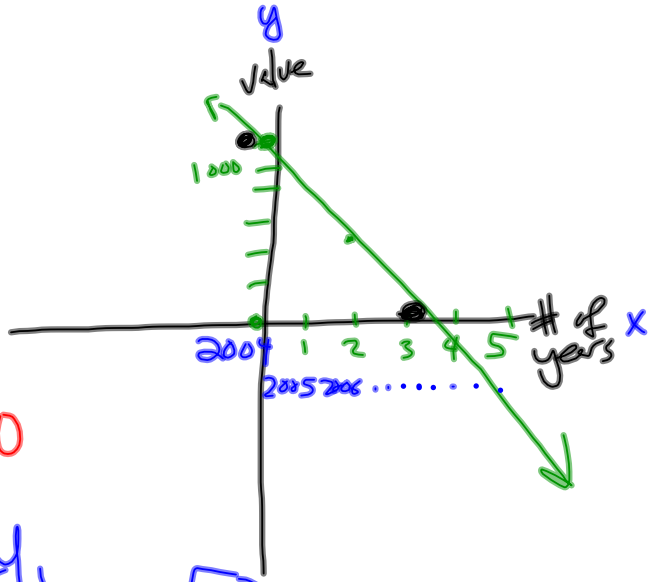
$\boxed{y = \frac{-1}{2}x}$ B

① $1,200 after 0 years 2004

② $500 after 2 years 2006

x = # of years

y = $ of computer



2 points

$b = 1200$

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{500 - 1200}{2 - 0}$

$= \frac{-700}{2} = -350$

$y = mx + b$

$y = -350x + 1200$

$x = 4$?

$y = -350(4) + 1200$

$= -1400 + 1200$

$= -200$

$x = 6$?

$y = -350(6) + 1200$

$= -2100 + 1200$

$= -900$

VERIFICATION:

- Start with initial information
- Substitute into any equations you've found or modified
- If two sides aren't equal, you messed up!

$y = mx + b$

$y = -350x + 1200$

bought (year = 0): 1200 (0, 1200)

year = 2: 500 (2, 500)

x y

$1200 = -350(0) + 1200$ ✓

$1200 = 1200$

$500 = -350(2) + 1200$

$500 = -700 + 1200$

$500 = 500$

$y = 350x + 1200$

(0, 1200)
(2, 500)

$1200 = 350(0) + 1200$

✓ $1200 = 1200$

$500 = 350(2) + 1200$

$500 = 700 + 1200$

X $500 = 1900$