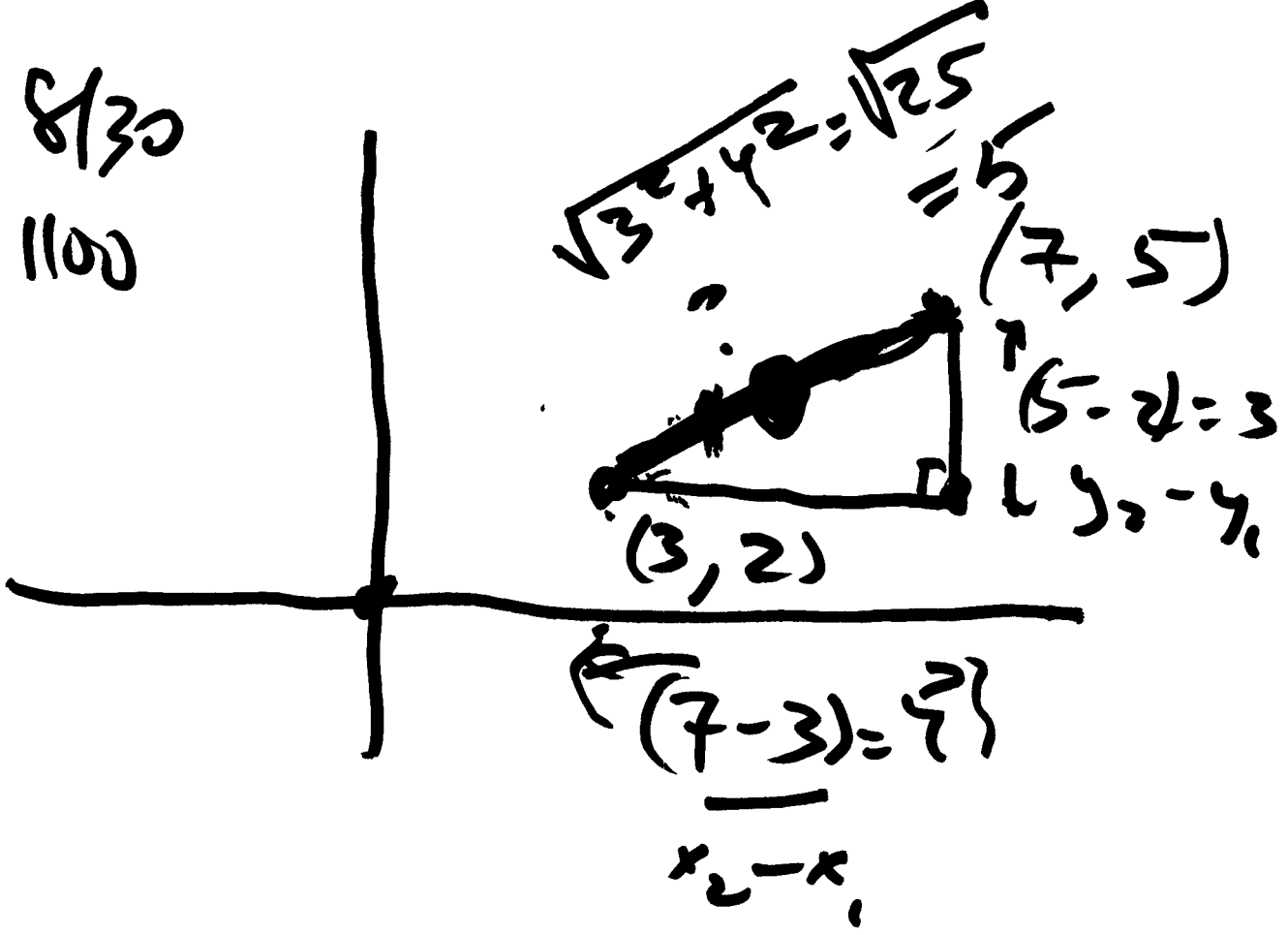
8/30
1100

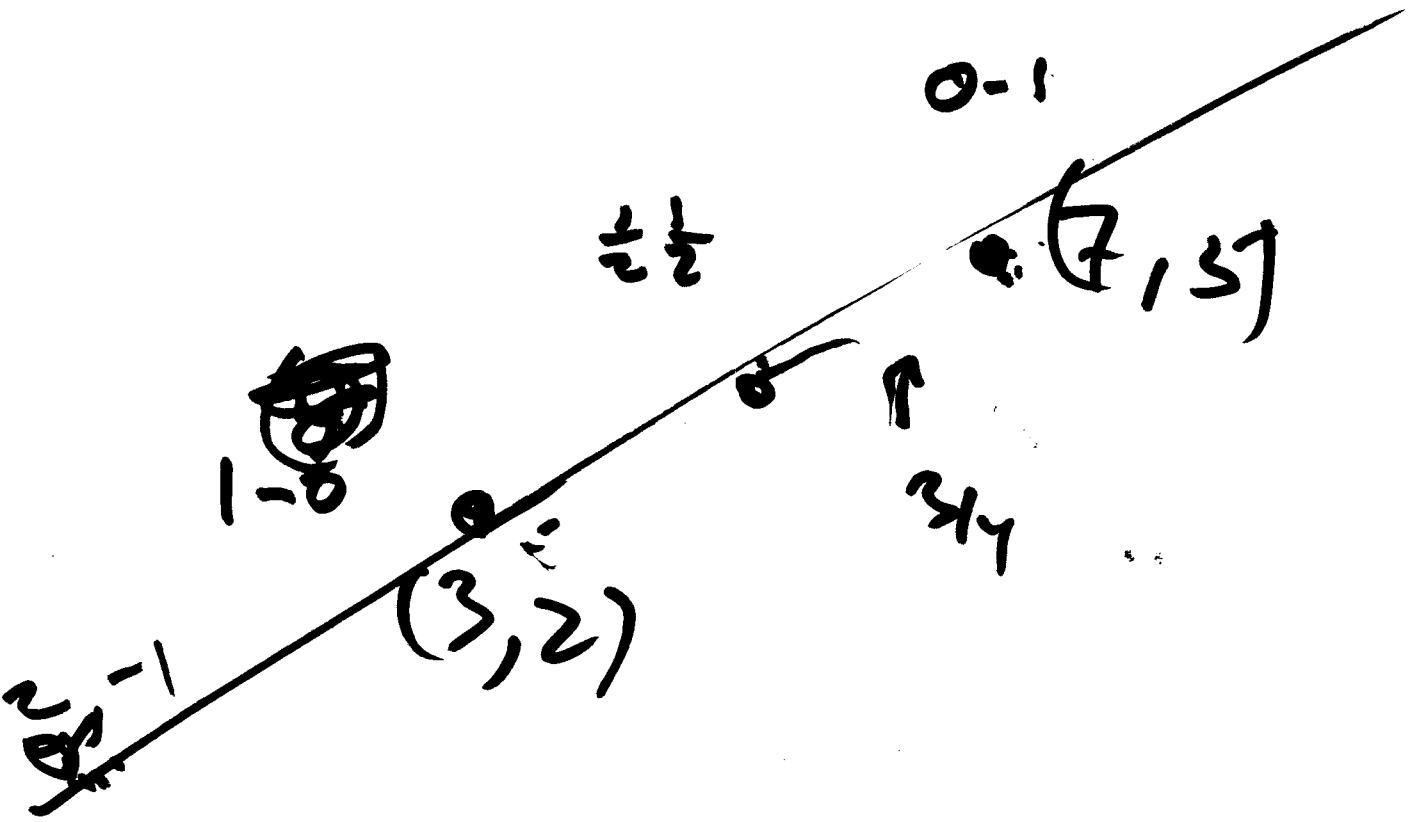



$$x_1 + \frac{x_2 - x_1}{2} = \frac{1}{2}x_1 + \frac{1}{2}x_2$$

$$= \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$$

$\frac{1}{2}\langle 3, 2\rangle + \frac{1}{2}\langle 7, 5\rangle$ $\left(\frac{1}{2}(3+7), \frac{1}{2}(2+5)\right)$

$\frac{1}{3}(7, 5) + \frac{2}{3}(3, 2)$ $\left(5, 3\frac{1}{2}\right)$




$1(3,2)+0(7,5)=(3,2)$

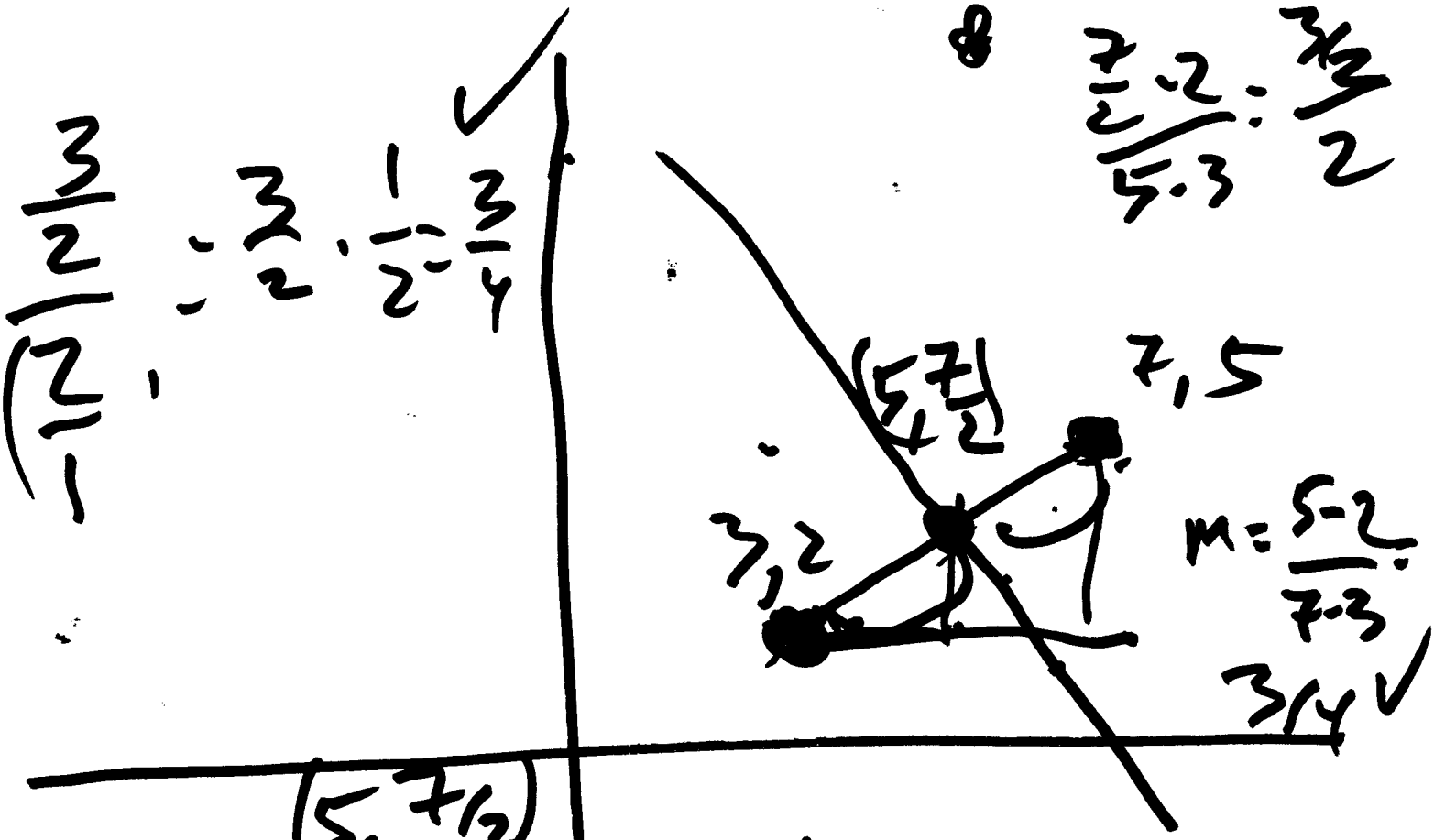
$\frac{1}{2}(3,2)+\frac{1}{2}(7,5)=(5,\frac{7}{2})$

$0(3,2)+1(7,5)=(7,5)$

$\frac{1}{4}(3,2)+\frac{3}{4}(7,5)=$

$\frac{1}{2}\cdot 3+\frac{1}{2}\cdot 7$ / $\frac{1}{2}\cdot 2+\frac{1}{2}\cdot 5$

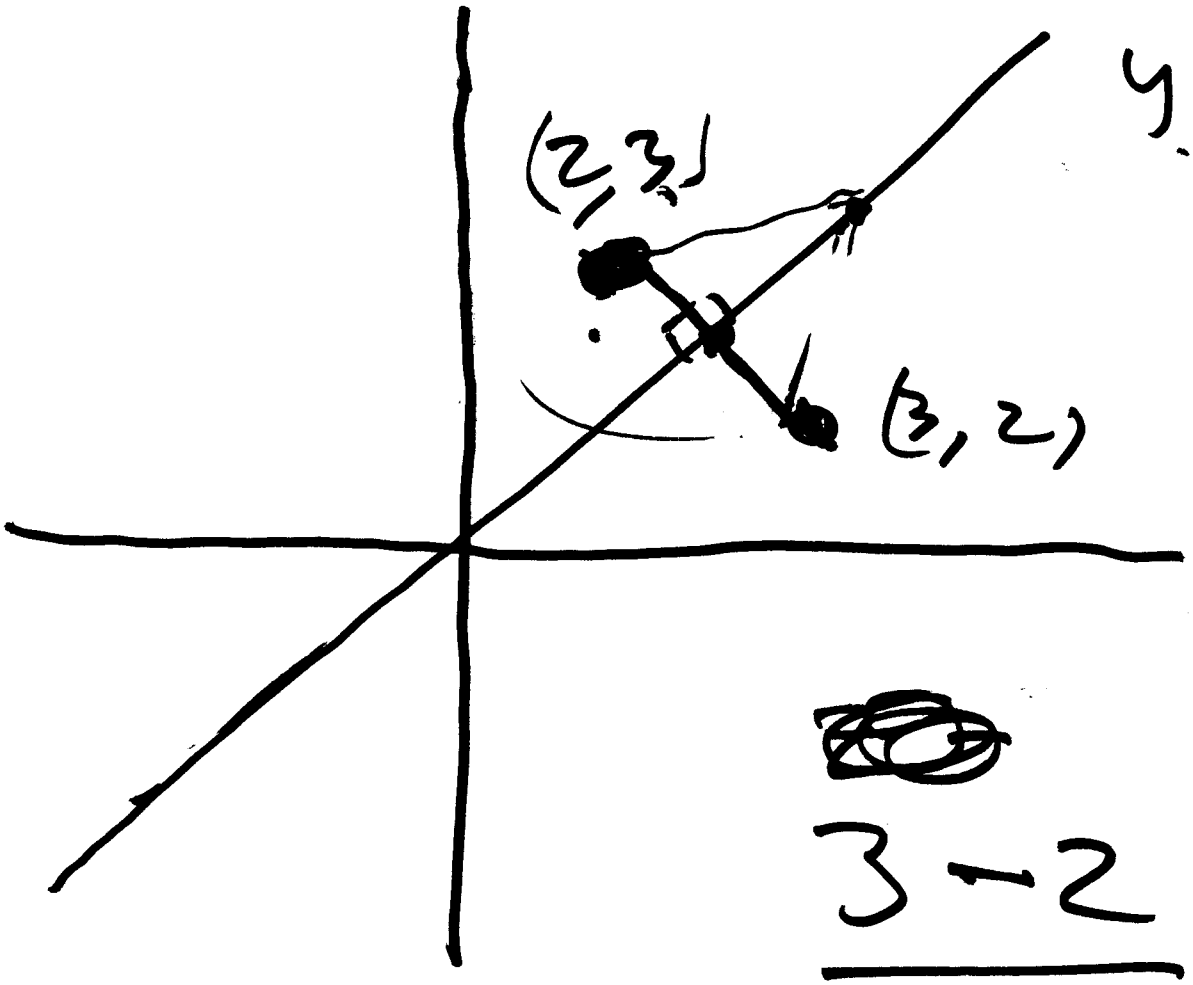
$\frac{3+7}{2}$ , $\frac{2+5}{2}$




Ex: Is on the line containing (3,2) (7,5)

And is equidistant from them

$\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$ $(x_1, y_1)$ $(x_2, y_2)$

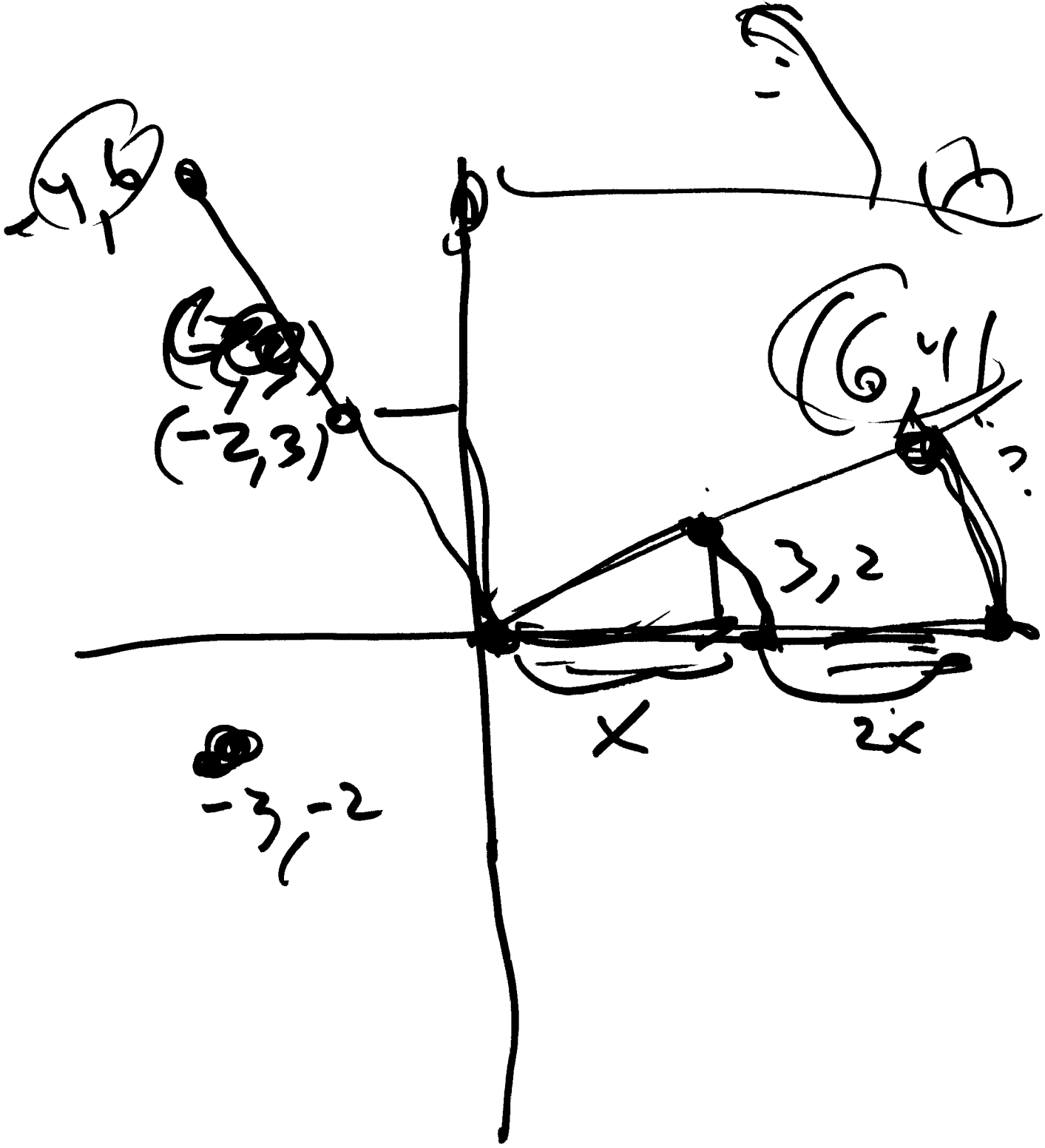



Slope 1

$$\frac{3-2}{2-3}$$

$(x,y)$
$(y,x)$

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


(-2,3)
(6,1)
3,2
x
2x
-3,-2