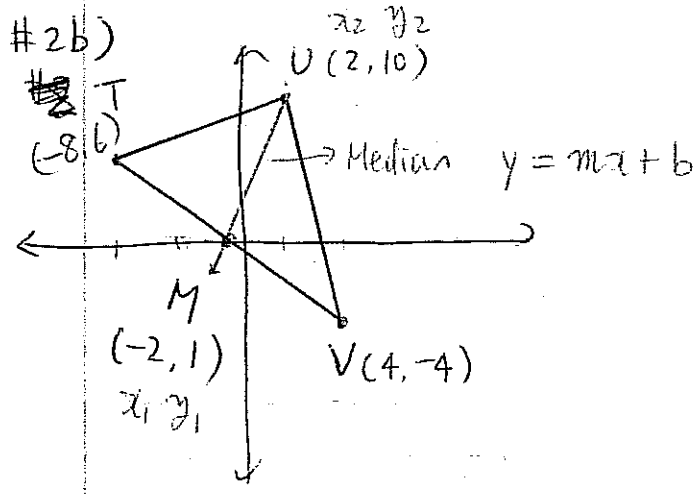
March 25 MPM2D Park "Review for Unit 3"

#2b)



Mid of $\overline{TB} = \left(\frac{4+-8}{2}, \frac{-4+6}{2}\right)$

$= (-2, 1)$

m of $\overline{UM} = \frac{10-1}{2--2} = \frac{9}{4}$

Median $\Rightarrow y = \frac{9}{4}x + b$

Sub U (2, 10) ↗

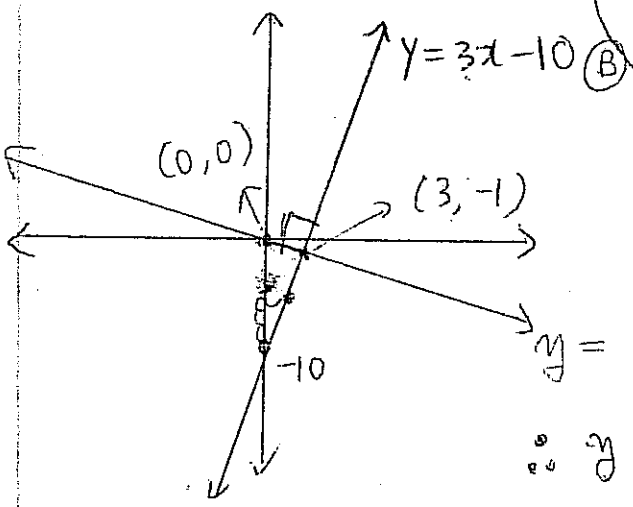
$10 = \frac{9}{4}(2) + b$

$10 = \frac{9}{2} + b \Rightarrow 10 - 4.5 = b$

$\therefore b = 5.5$

$\therefore$ Eq of Median from U is $y = \frac{9}{4}x + 5.5$

#8



$D = \sqrt{x^2 + y^2}$

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

$\therefore y = -\frac{1}{3}x$ — (A)

$y = 3x - 10$ — (B)

Sub (A) into (B) $-\frac{1}{3}x = 3x - 10$

$-\frac{1}{3}x - \frac{9}{3}x = -10$

$-\frac{3}{10}x - \frac{10}{3}x = -10 \times -\frac{3}{10}$

$\therefore x = 3$ → sub into (B) $y = 3 \times 3 - 10$

$\therefore y = -1$

$D = \sqrt{3^2 + (-1)^2}$

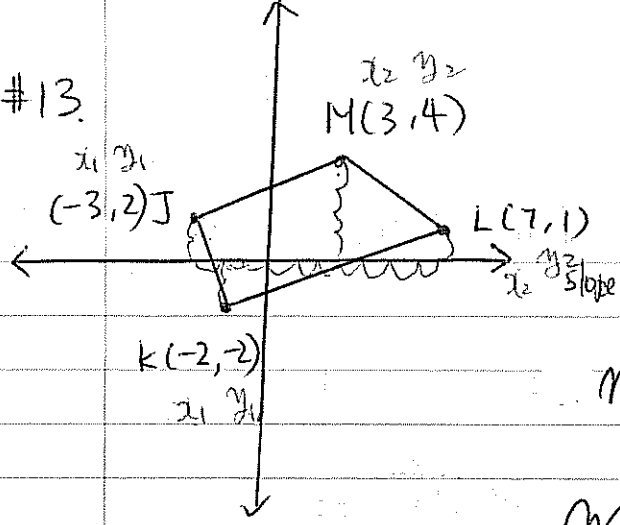
$D = \sqrt{9 + 1}$

$D = \sqrt{10}$

$D = 3.16$

$\therefore$ The distance between orgin and the line is 3.16.

#13.



Trapezoid = only one pair of sides is parallel.

Slope $\overline{MJ}$ = slope of $\overline{LK}$

$$m_{MJ} = \frac{4-2}{3--3} = \frac{2}{6} = \frac{1}{3}$$

$$m_{KL} = \frac{1--2}{7--2} = \frac{3}{9} = \frac{1}{3}$$

$\therefore$ m_{MJ} and m_{KL} are pararrel to each other.

$$m_{JK} = \frac{-2-2}{-2--3} = \frac{-4}{1} = -4$$

$$m_{ML} = \frac{1-4}{7-3} = \frac{-3}{4}$$

$\therefore$ Only one pair ($\overline{MJ}$ and $\overline{KL}$) is parallel to each other.