Before we begin, are there any questions from last day's work?

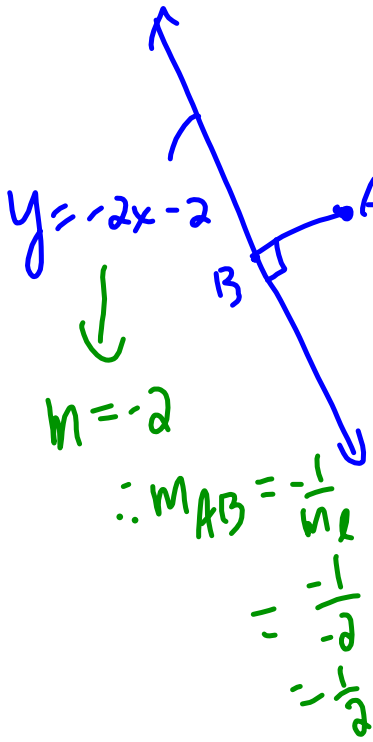
Today's Learning Goal(s): 1, 3, 4, 18

By the end of the class, I will be able to:

a) solve problems involving slope, midpoint and length formulas.

Show What You Know 2.1 is first.

p.89 #1



$m = -2$

$\therefore m_{AB} = -\frac{1}{m_L}$

$= \frac{-1}{-2}$

$= -\frac{1}{2}$

Need m_{AB}

$\therefore y = \frac{1}{2}x + b$

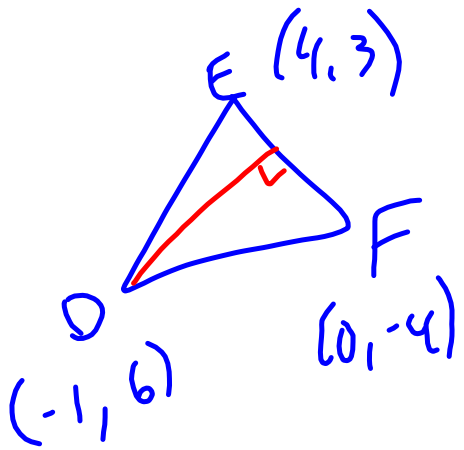
$(0) = \frac{1}{2}(1) + b$

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

$-\frac{1}{2} = b$

$\therefore y = \frac{1}{2}x - \frac{1}{2}$ is the eqn of AB.

p90 #18



$m_{EF} = \frac{-1}{m_{Alt.}}$

$m_{EF} = \frac{-4-3}{0-4}$

$= \frac{-7}{-4}$

$= \frac{7}{4}$

$m_h = \frac{-4}{7}$

$\therefore y = -\frac{4}{7}x + b$

$(6) = -\frac{4}{7}(-1) + b$

$6 = \frac{4}{7} + b$

$6 - \frac{4}{7} = b$

$\frac{42}{7} - \frac{4}{7} = b$

$\frac{38}{7} = b$

$\therefore y = -\frac{4}{7}x + \frac{38}{7}$

is the eqn of the altitude from D.

$$6 = \frac{4}{7} + b$$

$$7(6) = 7\left(\frac{4}{7}\right) + 7(b)$$

$$42 = 4 + 7b$$

$$42 - 4 = 7b$$

$$38 = 7b$$

$$\frac{38}{7} = b$$

$$\therefore y = -\frac{4}{7}x + \frac{38}{7}$$

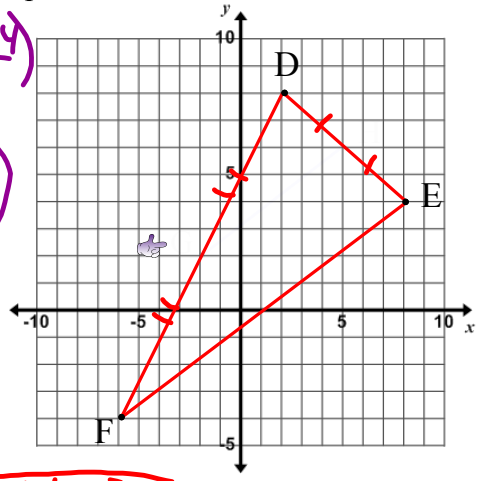
MPM 2DI 2.3 Apply Slope, Midpoint and Length Formulas (Day2) Date: Oct. 3/16

Ex. 1 A triangle has vertices D (2 , 8), E(8 , 4) and F(– 6 , – 4).
Let the midpoints of DF and DE be G and H respectively, to form midsegment GH.
Show that GH is one half the length of FE, and is parallel to FE.

$M_{DF} = \left(\frac{2+(-6)}{2}, \frac{8+(-4)}{2}\right)$ $M_{DE} = \left(\frac{2+8}{2}, \frac{8+4}{2}\right)$

$G = \left(\frac{-4}{2}, \frac{4}{2}\right)$ $H = \left(\frac{10}{2}, \frac{12}{2}\right)$

$G(-2, 2)$ $H(5, 6)$



$|GH| = \sqrt{(5-(-2))^2 + (6-2)^2}$

$= \sqrt{(7)^2 + 4^2}$

$= \sqrt{49+16}$

$= \sqrt{65}$ units

$|FE| = \sqrt{(8-(-6))^2 + (4-(-4))^2}$

$= \sqrt{(8+6)^2 + (4+4)^2}$

$= \sqrt{14^2 + 8^2}$

$= \sqrt{196+64}$

$= \sqrt{260}$

$= \sqrt{4}\sqrt{65}$

$= 2\sqrt{65}$ units

$\therefore |FE| = 2|GH|$

$\therefore |GH| = \frac{1}{2}|FE|$

Today pp. 89-90 #5, 7a, 8, 9, 17

$M_{GH} = \frac{6-2}{5-(-2)}$ $M_{FE} = \frac{4-(-4)}{8-(-6)}$

$= \frac{4}{7}$ $= \frac{8}{14}$

$= \frac{4}{7}$

$\therefore M_{GH} = M_{FE}$

$\therefore GH \parallel FE$