

Translation or a Slide

$$\begin{array}{r} x \\ y \end{array} \begin{array}{c} A \quad B \quad C \\ \left[\begin{array}{ccc} -4 & 5 & 3 \\ 6 & 2 & -1 \end{array} \right] \end{array} + \begin{array}{c} \langle 3, -4 \rangle \\ \left[\begin{array}{ccc} 3 & 3 & 3 \\ -4 & -4 & -4 \end{array} \right] \end{array} = \begin{array}{c} A' \quad B' \quad C' \\ \left[\begin{array}{ccc} -1 & 8 & 6 \\ 2 & -2 & -5 \end{array} \right] \end{array}$$

Reflect over y axis use

$$\begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix}$$

Reflected over x axis use

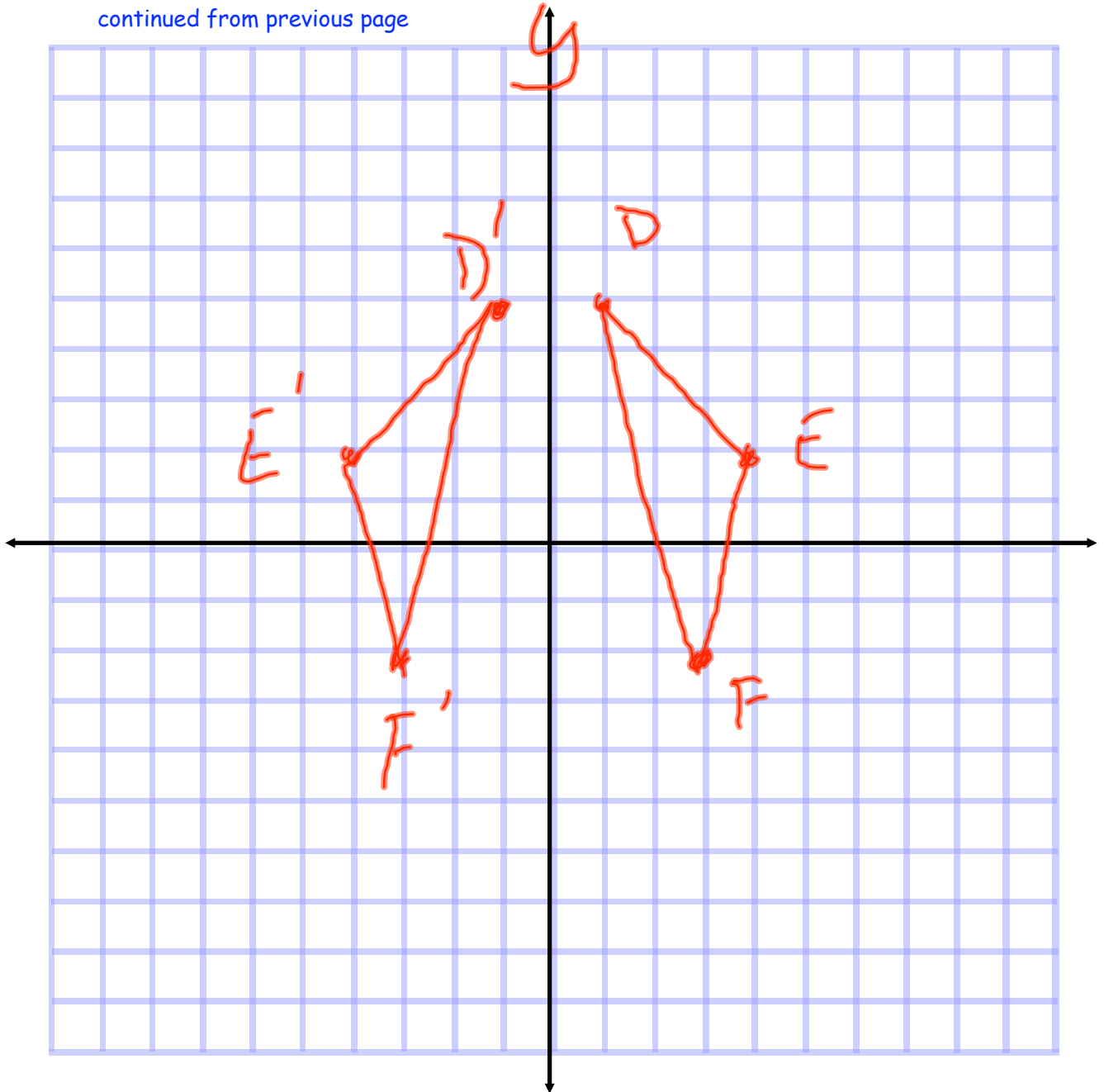
$$\begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$$

Reflection over the Y axis

$$\begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix} \cdot \begin{bmatrix} D & E & F \\ 1 & 4 & 3 \\ 5 & 2 & -2 \end{bmatrix} = \begin{bmatrix} D' & E' & F' \\ -1 & -4 & -3 \\ 5 & 2 & -2 \end{bmatrix}$$

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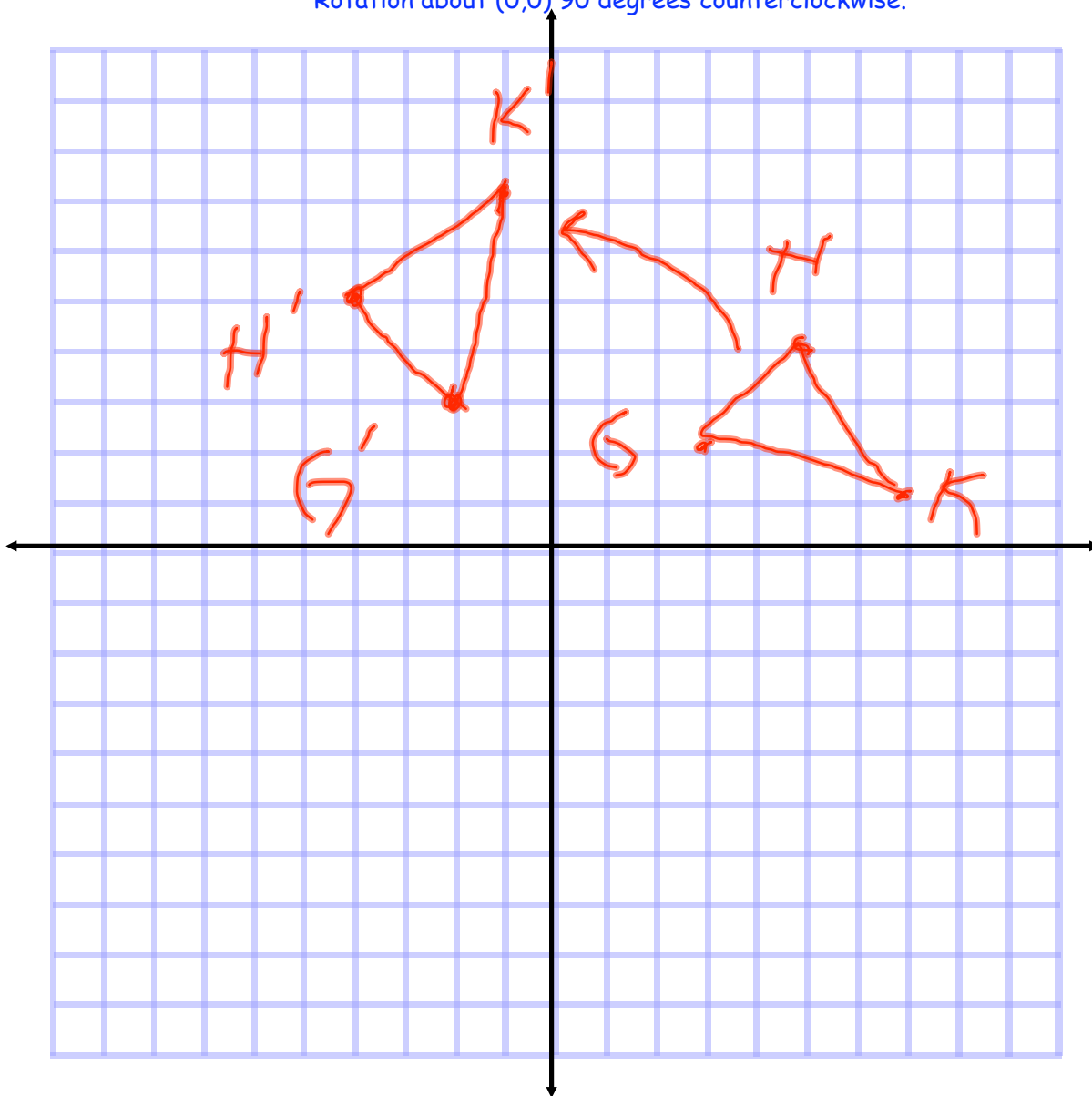


Rotation about (0,0) 90 degrees counterclockwise

$$\begin{bmatrix} 0 & -1 \\ 1 & 0 \end{bmatrix} \cdot \begin{bmatrix} G & H & K \\ 3 & 5 & 7 \\ 2 & 4 & 1 \end{bmatrix} = \begin{bmatrix} G' & H' & K' \\ -2 & -4 & -1 \\ 3 & 5 & 7 \end{bmatrix}$$

Continued

Rotation about (0,0) 90 degrees counterclockwise.



Find the area of triangle DIL below

$$A_D = 42 u^2$$

$$A_A = \frac{1}{2} \cdot 5 \cdot 5 \\ = 12 \frac{1}{2} u^2$$

$$A_B = \frac{1}{2} \cdot 2 \cdot 6 \\ = 6 u^2$$

$$A_C = \frac{1}{2} \cdot 1 \cdot 7 \\ = 3 \frac{1}{2} u^2$$

$$A_{\Delta} = 42 - 12 \frac{1}{2} - 6 - 3 \frac{1}{2} \\ = 20 u^2$$

