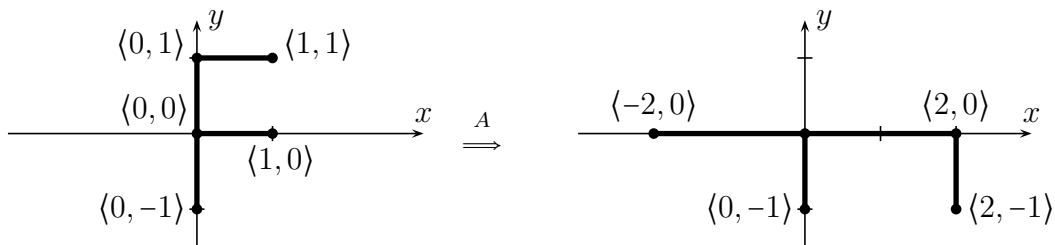**Name:** *Answer Key*

PID:

1. A transformation $A : \mathbb{R}^2 \to \mathbb{R}^2$ transforms the "F" in standard position as shown below. Give a 2×2 matrix that represents A.

$$\begin{pmatrix} 0 & 2 \\ -1 & 0 \end{pmatrix}$$

2. A transformation $A : \mathbb{R}^2 \to \mathbb{R}^2$ is defined by $A(\langle x, y \rangle) = \langle -y, y - x \rangle$.

(a) Give the 2×2 matrix M that represents A. $\quad \begin{pmatrix} 0 & -1 \\ -1 & 1 \end{pmatrix} \quad$ since $A(\langle 1, 0 \rangle) = \langle 0, -1 \rangle$ and $A(\langle 0, 1 \rangle) = \langle -1, 1 \rangle$

(b) On the axes below, draw how the "F" in standard position is transformed by A. (The tick marks on the axes indicate where x, y are equal to $-2, -1, 1, 2$.)