Name:

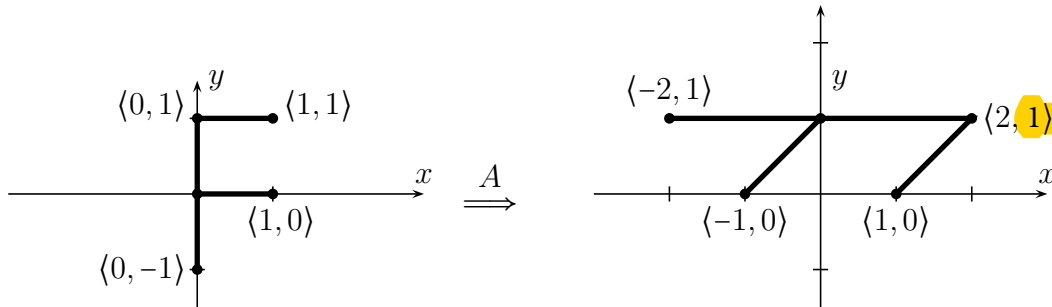**PID:**

These problems concern the affine function A which maps the "F" shape as shown:

1. Express transformation $A : \mathbb{R}^2 \to \mathbb{R}^2$ in the form $A(\mathbf{x}) = M\mathbf{x} + \mathbf{u}$ where M is a matrix and $\mathbf{u} \in \mathbb{R}^2$. (Given M and $\mathbf{u}$ explicitly.)

2. Now express the inverse transformation A^{-1} in the form $A^{-1}(\mathbf{x}) = N\mathbf{x} + \mathbf{v}$ where N is a matrix and $\mathbf{v} \in \mathbb{R}^2$.