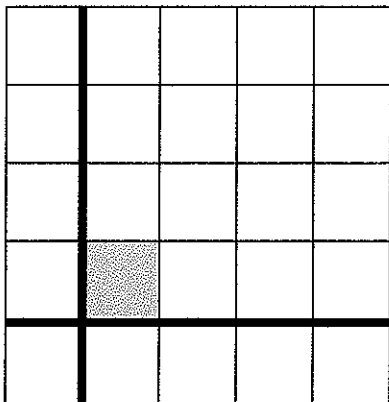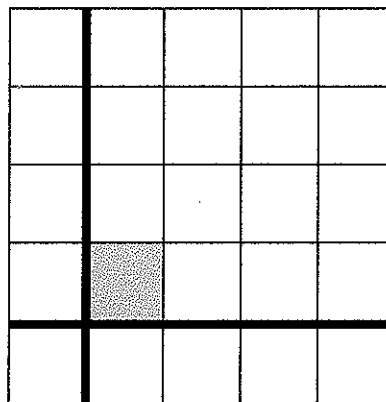Sketch the image of the unit square under each transformation.
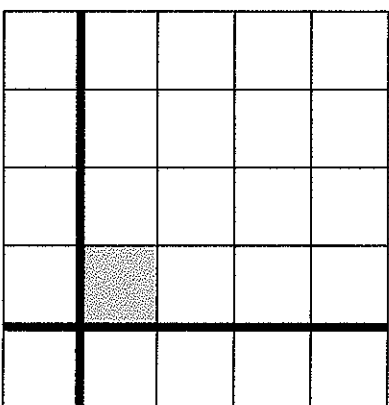
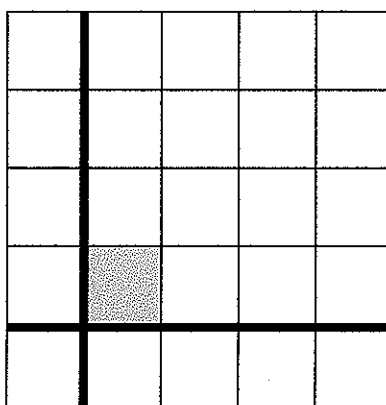$T(\mathbf{x}) = \begin{bmatrix} 2 & 0 \\ 0 & 2 \end{bmatrix} \mathbf{x}$

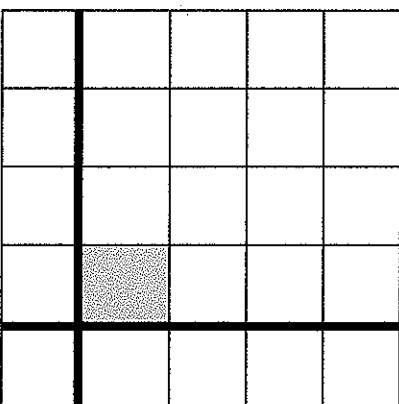$T(\mathbf{x}) = \begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix} \mathbf{x}$

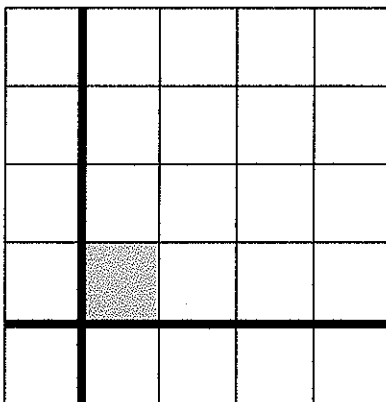$T(\mathbf{x}) = \begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix} \mathbf{x}$

$T(\mathbf{x}) = \begin{bmatrix} -1 & 0 \\ 0 & -1 \end{bmatrix} \mathbf{x}$
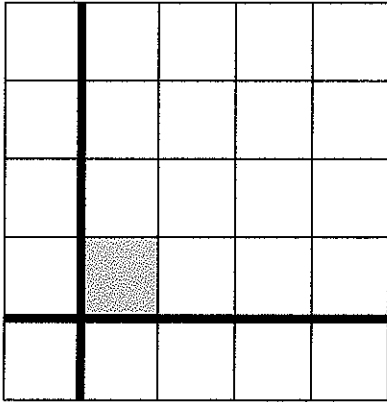
$T(\mathbf{x}) = \begin{bmatrix} \dfrac{\sqrt{2}}{2} & \dfrac{-\sqrt{2}}{2} \\ \dfrac{\sqrt{2}}{2} & \dfrac{\sqrt{2}}{2} \end{bmatrix} \mathbf{x}$
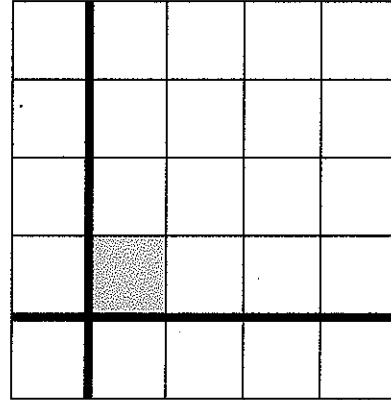
$T(\mathbf{x}) = \begin{bmatrix} 1 & 3 \\ 0 & 1 \end{bmatrix} \mathbf{x}$

$$T(\mathbf{x}) = \begin{bmatrix} 3 & 0 \\ 0 & 1 \end{bmatrix} \mathbf{x}$$

$$T(\mathbf{x}) = \begin{bmatrix} 1 & 0 \\ 0 & 0.5 \end{bmatrix} \mathbf{x}$$

$$T(\mathbf{x}) = \begin{bmatrix} 2 & 0 \\ 0 & 3 \end{bmatrix} \mathbf{x}$$