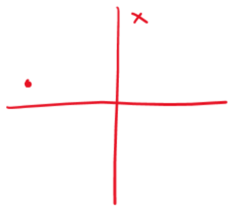
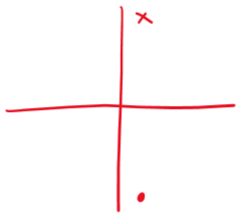
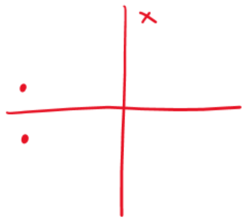
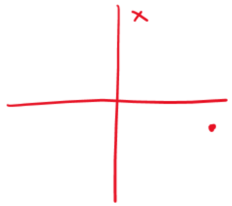
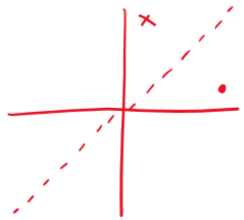
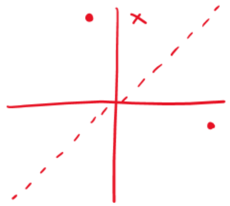
a)

By considering matrices for transformations, describe the single transformation that is equivalent to a 90° anti-clockwise rotation about the origin followed by a reflection in the x-axis.

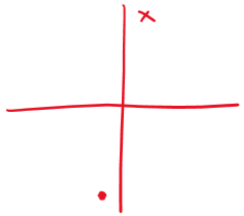
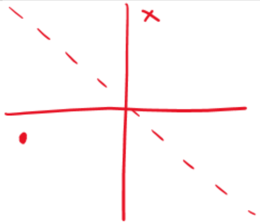
What is the matrix for a 90° anti-clockwise rotation about the origin?		$\begin{bmatrix} 0 & -1 \\ 1 & 0 \end{bmatrix}$
What is the matrix for a reflection in the x-axis?		$\begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$
How can we show the first transformation following the first?		$\begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}\begin{bmatrix} 0 & -1 \\ 1 & 0 \end{bmatrix}$ $= \begin{bmatrix} 0 & -1 \\ -1 & 0 \end{bmatrix}$
What transformation does this matrix represent?	A reflection in the line $y = -x$.	

b)

By considering matrices for transformations, describe the single transformation that is equivalent to a 90° clockwise rotation about the origin followed by a reflection in the line $y = x$.

What is the matrix for a 90° clockwise rotation about the origin?		$\begin{bmatrix} 0 & 1 \\ -1 & 0 \end{bmatrix}$
What is the matrix for a reflection in the line $y = x$?		$\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$
How can we show the first transformation following the first?		$\begin{bmatrix} \quad & \quad \\ \quad & \quad \end{bmatrix}\begin{bmatrix} 0 & 1 \\ -1 & 0 \end{bmatrix}$ $= \begin{bmatrix} \quad & \quad \\ \quad & \quad \end{bmatrix}$
What transformation does this matrix represent?		

c)
By considering matrices for transformations, describe the single transformation that is equivalent to a 180° rotation about the origin followed by a reflection in the line $y = -x$.

What is the matrix for a 180° rotation about the origin?	 $\begin{bmatrix} -1 & 0 \\ 0 & -1 \end{bmatrix}$
What is the matrix for a reflection in the line $y = -x$?	 $\begin{bmatrix} 0 & -1 \\ -1 & 0 \end{bmatrix}$
How can we show the first transformation following the first?	
What transformation does this matrix represent?	

d)
By considering matrices for transformations, describe the single transformation that is equivalent to a 90° anti-clockwise rotation about the origin followed by a reflection in the line $y = x$.