**Exercise Matrix Algebra Application to Computer Graphics**

A rectangle having vertices in homogenous coordinates is represented by the matrix .

1. Find the image of this rectangle under the rotation of the plane through an angle of clockwise about the origin.
2. Find the image of this rectangle under the rotation of the plane through an angle of anticlockwise about the origin.
3. Find the image of this rectangle under the rotation of the plane through an angle of clockwise about the origin.