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| **Rotations Using Matrices** | | |
| **(a)** | **(b)** | **(c)** |
| By considering the unit square, determine the matrix which describes a rotation clockwise about the origin. | Describe fully the single transformation represented by the matrix | By considering the unit square, determine the matrix which describes a rotation about the origin. |
| **(d)** | **(e)** | **(f)** |
| The point is mapped onto the point when rotated anti-clockwise about the origin. Using matrix algebra, find the values of and . | The point is mapped onto the point when rotated anti-clockwise about the origin. Using matrix algebra, find the values of and . | A triangle with vertices at , and is rotated about the origin. Use matrix algebra to find the coordinates of the vertices of the rotated triangle. |
| **(g)** | **(h)** | **(i)** |
| Use matrix algebra to show that a rotation of clockwise about the origin, followed by a rotation of is equivalent to a rotation of anti-clockwise about the origin. | The point is mapped onto the point following a rotation of anti-clockwise about the origin. Use matrix algebra to find the values of and . | The point is mapped onto the point following a rotation of clockwise about . Use matrix algebra to find the values of and . |