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| **Enlargements Using Matrices** | | |
| **(a)** | **(b)** | **(c)** |
| By considering the unit square, determine the matrix which describes an enlargement about the origin with scale factor . | Describe fully the single transformation represented by the matrix | Use matrix algebra to show that an enlargement of scale factor about , followed by an enlargement of scale factor about is equivalent to an enlargement of scale factor about . |
| **(d)** | **(e)** | **(f)** |
| The point is mapped onto the point when enlarged by a scale factor about the origin. Using matrix algebra, find the values of and . | The unit square OABC with coordinates O(0, 0), A(0, 1), B(1, 1) and C(1, 0) is mapped to OA’B’C’ under matrix . Use matrix algebra to find the coordinates of A’, B’ and C’. | The point is mapped onto the point when enlarged by a scale factor about the origin. Using matrix algebra, find the values of and . |
| **(g)** | **(h)** | **(i)** |
| Use matrix algebra to show that an enlargement of scale factor about , followed by an enlargement of scale factor about is the same as a rotation of about the origin. | The point is mapped to the point when enlarged with scale factor about the origin. Use matrix algebra to find the possible values of and . | The point (, ) is mapped to the point (, ) when transformed under the matrix . Find the values of and . |