**Reflection and Rotation Matrices**

A triangle with coordinates (3,2), (5,2) and (3,6) is transformed by the matrix . By pre-multiplying, find the coordinates of the transformed triangle. Draw this transformation on a grid and hence describe it fully.

A triangle with coordinates (-3,2), (-5,2) and (-3,5) is transformed by the matrix . By pre-multiplying, find the coordinates of the transformed triangle. Draw this transformation on a grid and hence describe it fully.

A triangle with coordinates (2,3), (4,3) and (4,7) is transformed by the matrix . By pre-multiplying, find the coordinates of the transformed triangle. Draw this transformation on a grid and hence describe it fully.

A triangle with coordinates (3,1), (5,1) and (3,5) is transformed by the matrix . By pre-multiplying, find the coordinates of the transformed triangle. Draw this transformation on a grid and hence describe it fully.

The transformation matrix maps the point onto the point . Work out the values of and .

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