

- 5 On the grid opposite, trapezium B is the image of trapezium A under a single transformation.

(a) Describe fully the single transformation.

(3)

Trapezium C is the image of trapezium A under a reflection in the line with equation $x = -1$

(b) On the grid opposite, draw and label trapezium C .

(2)

Trapezium A is transformed to trapezium D under the transformation with matrix \mathbf{M} where

$$\mathbf{M} = \begin{pmatrix} -2 & 0 \\ 0 & -1 \end{pmatrix}$$

(c) On the grid opposite, draw and label trapezium D .

(3)

Trapezium D is transformed to trapezium B under the transformation with matrix \mathbf{N} .

(d) Find matrix \mathbf{N} .

(3)

$$\left[\text{The inverse of matrix } \begin{pmatrix} a & b \\ c & d \end{pmatrix} \text{ is } \frac{1}{ad - bc} \begin{pmatrix} d & -b \\ -c & a \end{pmatrix} \right]$$



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A coordinate plane with x and y axes ranging from -6 to 6. The grid lines are spaced at 1-unit intervals. Two shaded regions, A and B, are shown. Region A is a quadrilateral with vertices at (1, 2), (2, 2), (2, 1), and (1, 1). Region B is a quadrilateral with vertices at (2, 4), (4, 4), (4, 2), and (2, 2).



Question 5 continued

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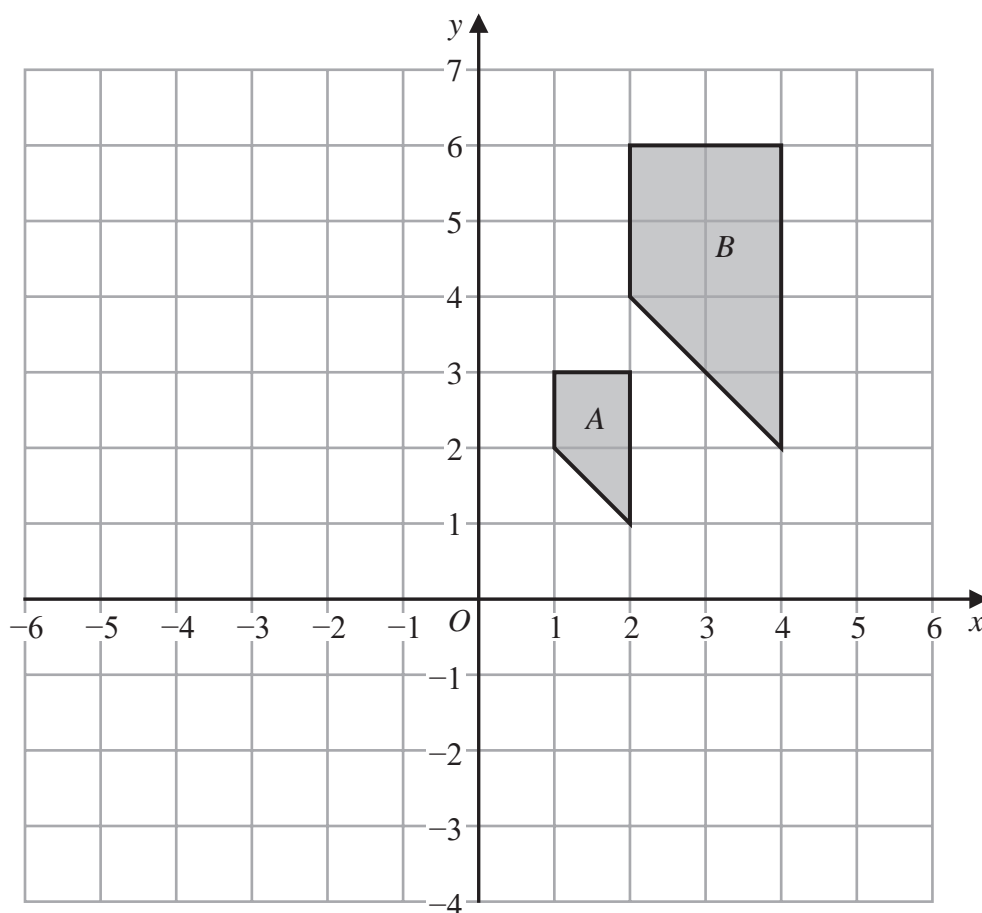
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Question 5 continued

Only use this grid if you need to redraw your trapeziums.



(Total for Question 5 is 11 marks)

