4.

$$\mathbf{A} = \begin{pmatrix} 1 & 0 \\ 0 & 3 \end{pmatrix}$$

(a) Describe the single geometrical transformation represented by the matrix **A**.

(2)

The matrix **B** represents a rotation of 210° anticlockwise about centre (0, 0).

(b) Write down the matrix **B**, giving each element in exact form.

(1)

The transformation represented by matrix **A** followed by the transformation represented by matrix **B** is represented by the matrix **C**.

(c) Find **C**.

(2)

The hexagon H is transformed onto the hexagon H' by the matrix **C**.

(d) Given that the area of hexagon H is 5 square units, determine the area of hexagon H'

(2)

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Question 4 continued

(Total for Question 4 is 7 marks)