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5.

$$\mathbf{A} = \begin{pmatrix} \frac{1}{2} & -\frac{\sqrt{3}}{2} \\ \frac{\sqrt{3}}{2} & \frac{1}{2} \end{pmatrix}$$

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

(3)

(b) Hence write down the matrix $\mathbf{A}^6$

(1)

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

Given that

$$\mathbf{B} = \begin{pmatrix} 2\sqrt{3} & -7 \\ -4 & 5\sqrt{3} \end{pmatrix}$$

(c) find the matrix **C**, giving your answer in simplest form.

(4)

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Question 5 continued

Q5

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