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6. $$\mathbf{A} = \begin{pmatrix} 2 & 3 \\ 1 & -4 \end{pmatrix}$$

The transformation represented by **A** maps the point $R(3p - 13, p - 4)$, where p is a constant, onto the point $R'(7, -2)$

(a) Determine the value of p

(3)

The point S has coordinates $(0, 7)$

Given that O is the origin,

(b) determine the area of triangle ORS

(2)

The transformation represented by **A** maps the triangle ORS onto the triangle $OR'S'$

(c) Hence, using your answer to part (b), determine the area of triangle $OR'S'$

(2)

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Question 6 continued

Q6

(Total 7 marks)