The matrix A has the following property:

$$A^2 = 6A - I, \text{ where } I \text{ is the identity matrix.}$$

(a) Express A^3 in the form $pA + qI$, where $p, q \in \mathbb{R}$.   **2**

Matrix A is non-singular.

(b) Find a similar expression for A^{-1} in terms of A and I.   **2**

Answers:

(a) $35A - 6I$

(b) $A^{-1} = 6I - A$