1:

$$\mathbf{M} = \begin{pmatrix} 1 & a \\ 3 & -5 \end{pmatrix}$$

where a is a constant, $a \neq -\frac{5}{3}$

(a) Determine $\mathbf{M}^{-1}$ in terms of a.

(3)

Given that $\mathbf{M}^{-1} = 2\mathbf{M} + 8\mathbf{I}$ where $\mathbf{I}$ is the 2×2 identity matrix,

(b) determine the value of a.

(3)

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Question 1 continued

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Question 1 continued

(Total for Question 1 is 6 marks)