Homework 2
F17CC Introduction to university mathematics

This homework will contribute 10% to your final course grade. Write your solutions on the question sheet and **staple on front** *a signed and completed* **coursework submission form***. These forms can be found in the corridor joining CM and EM on the first-floor — ask in the School Office if you cannot find them. Your solutions should be* **posted in the Mathematics postbox** *between CM and EM* **by 3.30 pm Friday 10th November***.* **Late work will not be marked and you will automatically receive zero. I am not joking. Don't even think about it!** *You will be marked on the clarity of your solutions and the accuracy of your reasoning.*

In these questions, let

$$A = \begin{pmatrix} 0 & 0 & 1 \\ 0 & -1 & 0 \\ 2 & 2 & 1 \end{pmatrix}.$$

1. Calculate $A^3 - 3A$. [2 marks]

2. Calculate the adjugate of A and show that your answer works. [4 marks]

3. Find the eigenvalues of A and their multiplicities. [4 marks]