Name: _____

Student ID: _____

Quiz 3

This quiz is graded out of 10 marks. No books, calculators, notes or cell phones are allowed. You must show all your work, the correct answer is worth 1 mark the remaining marks are given for the work. If you need more space for your answer use the back of the page.

Question 1. Consider the matrix:

$$B = \begin{bmatrix} \frac{1}{2} & 0 & 0 \\ 0 & 3 & 0 \\ 0 & 0 & \sqrt{2} \end{bmatrix}, C = \begin{bmatrix} 1 & 0 & 2 & 1 \\ 2 & 0 & 3 & 2 \\ -2 & -1 & 0 & -2 \\ -2 & 0 & 0 & 0 \end{bmatrix}$$

a. *(3 marks)* Compute $\det(B^{-2})$

b. *(4 marks)* Compute $\det(C)$

c. *(3 marks)* If A is an $n \times n$ symmetric matrix then show that $2A^2 - 3A + I$ is symmetric.