

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:

$$B = \begin{bmatrix} 2 & 0 & 0 \\ 0 & \frac{1}{3} & 0 \\ 0 & 0 & \sqrt{3} \end{bmatrix}, C = \begin{bmatrix} 1 & 0 & 2 & 1 \\ -2 & 0 & 1 & 0 \\ 0 & -1 & 0 & 2 \\ -2 & 0 & 5 & 0 \end{bmatrix}$$

- (3 marks) Compute  $\det(B^{-2})$
- (4 marks) Compute  $\det(C)$
- (3 marks) If  $A$  is an  $n \times n$  symmetric matrix then show that  $2A^2 - 3A + I$  is symmetric.