

B14.

**MATH 1300: Test #2**

Name \_\_\_\_\_

Student Number \_\_\_\_\_

**1.** Use row reduction to find the inverse of the matrix  $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 1 \\ 1 & 1 & 2 \end{bmatrix}$ . (No marks will be given if other methods are used.)

**2.** Suppose  $A$  is a  $3 \times 3$  matrix such that  $A^2 + 3A = I$  (where, as usual,  $I$  is the identity matrix of the same size), and suppose  $(A + 3I)^T = B$ . Find  $A^{-1}$  in terms of  $B$ .

**3.** Compute the determinant of  $\begin{bmatrix} 1 & 1 & 1 \\ 2 & 1 & 0 \\ 1 & 3 & 1 \end{bmatrix}$ .