

B13.

**MATH 1300: Test #1****Name:** \_\_\_\_\_**Student Number:** \_\_\_\_\_

**1.** Use **Gauss-Jordan elimination** to solve the following system. Show your work describing your steps. State clearly your final answer. (No marks will be given if you do not use Gauss-Jordan elimination!)

$$\begin{array}{rcl} x & + & y & - & z & = & 0 \\ & & 2y & - & 2z & = & -2 \\ & & & & 3z & = & 3 \end{array}$$

**2.** We are given

$$A = \begin{bmatrix} 1 & -1 \\ 0 & 2 \end{bmatrix}, B = \begin{bmatrix} 1 & 1 \\ 0 & 1 \\ -1 & 2 \end{bmatrix}, \text{ and } C = \begin{bmatrix} 1 & -3 & 2 \\ 1 & -1 & 0 \end{bmatrix}$$

Perform the operation if possible or indicate it is not possible.

(a)  $(3A)(2B)$

$$(b) (CB)+A$$

$$(c) (-2)B - C^T$$

**3.** Write down the inverse of the given matrix, if the inverse exists. Otherwise state that the matrix is not invertible.

$$(a) A = \begin{bmatrix} 3 & 0 \\ 0 & 2 \end{bmatrix}$$

$$(b) B = \begin{bmatrix} 6 & 0 \\ 3 & 0 \end{bmatrix}$$