

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!)

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

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