A23
TUT006

Quiz 1 (A1 & A2)

Mark _____/25

Last Name:_____ First Name:_____ Student #_____

1. [5 points]

Let $A = \begin{bmatrix} 3 & 0 \\ -1 & 2 \\ 1 & 1 \end{bmatrix}$, $C = \begin{bmatrix} 1 & 4 & 2 \\ 3 & 1 & 5 \end{bmatrix}$, $B = \begin{bmatrix} 4 & -1 \\ 0 & 2 \end{bmatrix}$

Compute $B^T\left(CC^T - A^TA\right)$

2. [9 points]

Solve the following system of equations using Gaussian Elimination

$$\begin{cases} x + y - 2z = 4 \\ 4x + 7y + 3z = 3 \\ 6x + 9y - z = 11 \end{cases}$$

3. [11 points]

Find Elementary Row operations and corresponding elementary matrices that reduce the given matrix to a Reduced Row Echelon form. Check whether or not the product of elementary matrices gives the same result when the same row operations are performed on A.

$$A = \begin{bmatrix} 1 & -2 & -1 \\ 2 & 1 & 1 \\ 0 & 1 & 0 \end{bmatrix}$$