Quiz 4

1. Find AB, AC, BC, and CB or state why it is not possible. (3 pts. each)

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

2. Suppose the matrix A is size $m \times n$, B is $n \times \ell$, and C is $m \times \ell$. What size is the matrix X if $A^T(AB + C) = X$? (3 pts.)

3. Find the inverse of A. Then, check your answer by verifying that $AA^{-1} = I$. (8 pts.)

$$A = \begin{bmatrix} -1 & -3 \\ 2 & 2 \end{bmatrix}$$