Name: _____

Quiz 3

This quiz is graded out of 10 marks. No books, calculators, notes or cell phones are allowed. You must show all your work, the correct answer is worth 1 mark the remaining marks are given for the work. If you need more space for your answer use the back of the page.

Question 1. §1.3 #TF *(3 marks)* Determine whether the statement is true or false, and justify your answer.
If B has a column of zeros, then so does AB if this product is defined.

Question 2. §1.3 #TF *(2 marks)* Determine whether the statement is true or false, and justify your answer.
For every matrix A, it is true that $(A^T)^T = A$.

Question 3. §1.3 #TF *(3 marks)* Determine whether the statement is true or false, and justify your answer.
if $AB + BA$ is defined, then A and B are square matrices of the same size.

Question 4. §1.2 #7 *(2 marks)* Consider the matrices

$$A = \begin{bmatrix} 3 & 0 \\ -1 & 2 \\ 1 & 1 \end{bmatrix}, B = \begin{bmatrix} 4 & -1 \\ 0 & 2 \end{bmatrix}, C = \begin{bmatrix} 1 & 4 & 2 \\ 3 & 1 & 5 \end{bmatrix}, D = \begin{bmatrix} 1 & 5 & 2 \\ -1 & 0 & 1 \\ 3 & 2 & 4 \end{bmatrix}, E = \begin{bmatrix} 6 & 1 & 3 \\ -1 & 1 & 2 \\ 4 & 1 & 3 \end{bmatrix}$$

Compute the given expression (if possible).

$(DA)^T$