Name: _____

Quiz 4

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. §1.4 #16 *(4 marks)* Use the given information to find A.

$$(5A^T)^{-1} = \begin{bmatrix} -3 & -1 \\ 5 & 2 \end{bmatrix}$$

Question 2. §1.4 #30 *(3 marks)* Assuming that all matrices are $n \times n$ are invertible, solve for D.

$$ABC^T DBA^T C = AB^T$$

Question 2. §1.4 #54b *(3 marks)* A square matrix A is said to be *idempotent* if $A^2 = A$. Show that if A is idempotent, then $2A - I$ is invertible and is its own inverse.