Name: _____

Quiz 11

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. *(2 marks)* §4.2 TF Determine whether the statement is true or false, and justify your answer.
The solution set of a consistent linear system $Ax = b$ of m equations in n unknowns is a subspace of $\mathbb{R}^n$.

Question 2. *(3 marks)* §4.2 #2g Determine whether the following is a subspace of $\mathscr{M}_{n\times n}$. The set of all $n \times n$ matrices A such that $AB = BA$ for some fixed $n \times n$ matrix B.

Question 3. *(5 marks)* §4.3 #15 Show that if $\{\vec{v}_1, \vec{v}_2\}$ is linearly independent and $\vec{v}_3$ does not lie in span$(\{\vec{v}_1, \vec{v}_2\})$ then $\{\vec{v}_1, \vec{v}_2, \vec{v}_3\}$ is linearly independent.