Name: _____

Quiz 9

This quiz is graded out of 8 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. §3.3 #38 Let $\vec{u}$ and $\vec{v}$ be nonzero vectors in 3-space, and let $k = ||\vec{u}||$ and $l = ||\vec{v}||$. Prove that the vector $\vec{w} = l\vec{u} + k\vec{v}$ bisects the angle between $\vec{u}$ and $\vec{v}$.

Question 2. §3.4 #TF determine whether the statement is true or false, and justify your answer. The general solution of the nonhomogeneous linear system $Ax = b$ can be obtained by adding b to the general solution of the homogeneous linear system $Ax = 0$.

Question 3. §3.4 #TF determine whether the statement is true or false, and justify your answer. If $\mathbf{x}_1$ and $\mathbf{x}_2$ are two solutions of the nonhomogeneous linear system $A\mathbf{x} = \mathbf{b}$, then $\mathbf{x}_1 - \mathbf{x}_2$ is a solution of the corresponding homogeneous linear system.