Quiz (Section 1.7)-A

Name: _____   **Signature:** _____

SHOW ALL YOUR WORK!

Mark each statement as True or False:

    a. The columns of a matrix A are linearly independent if the equation $A\mathbf{x} = \mathbf{0}$ has the trivial solution.

    b. The columns of a 9×10 matrix are linearly dependent.

    c. If $\mathbf{u}$ and $\mathbf{v}$ are linearly independent and $\{\mathbf{u}, \mathbf{v}, \mathbf{w}\}$ are linearly dependent then $\mathbf{w} \in \text{span}\{\mathbf{u}, \mathbf{v}\}$.

    d. If a set in $\mathbb{R}^n$ is linearly dependent, then the set contains more vectors than there are entries in each vector.

    e. If $\{\mathbf{u}, \mathbf{v}, \mathbf{w}\}$ is a linearly dependent set, then $\{\mathbf{u}, \mathbf{v}\}$ is also a linearly dependent set.