You may work with other class members on this quiz, but you may not receive assistance from people not in MATH 301. You must show all of your work to receive full credit. Do all your work on other sheets of paper and be sure to staple all the pieces of paper together or YOU WILL GET A ‘ZERO’ ON THE QUIZ. Do not use decimal approximations unless asked to do so. Your work on this quiz must be handed in by Monday, 10 February 2003 at 1:40 p.m. GOOD LUCK!

1) Consider the vectors
\[
\begin{bmatrix}
1 \\
2 \\
0
\end{bmatrix}, \begin{bmatrix}
-1 \\
0 \\
q
\end{bmatrix}, \text{ and } \begin{bmatrix}
p \\
n1
\end{bmatrix}.
\]
If these vectors are to form a linearly independent set, give a complete description of what must be true about the scalars $p$ and $q$.

2) Let $V$ be a set of $n$-vectors such that one of the elements of $V$ is the zero $n$-vector $0$. Prove that $V$ is linearly dependent.

3) Do Exercise 52 from Section 1.7.

4) Do Exercise 54 from Section 1.7.