

MATH 301 – Quiz 9

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 Tuesday, 15 April 2003 at 1:40 p.m. GOOD LUCK!

1) Let

$$A = \begin{bmatrix} -16 & -87 \\ 48 & -64 \end{bmatrix}.$$

Find all eigenvalues and associated eigenvectors of A .

2) Do Exercise 37 in Section 4.6.

3) Do Exercise 37b) in Section 4.6.

4) Do Exercise 42 in Section 4.6. Keep in mind that the symbol $|\lambda|$ is not the absolute value of λ , since λ may be complex. Rather, this symbol is the *magnitude* of the complex number λ . (It is easy to see that if λ is real, then the notions of absolute value and magnitude are the same.) You may find it helpful to read the discussion concerning the magnitude of a complex number on page 317.