

# Math 302

## Quiz 2

9/ 10/ 2011

Name:

ID #

**Problem 1** (5 points): Given the system

$$\begin{aligned}2x_1 + x_2 - x_3 &= 0 \\+x_2 + 2x_3 &= 3 \\2x_1 \quad - 3x_3 &= \alpha\end{aligned}$$

Find all values  $\alpha$ , for which the system is consistent. In that case find the solution.

**Problem 2** (5 points): Find all the eigenvalues of the matrix

$$A = \begin{pmatrix} -2 & 0 & 1 \\ 3 & 1 & -1 \\ -1 & -1 & 2 \end{pmatrix}$$

and compute an eigenvector corresponding to the smallest eigenvalue.