

## QUIZ #2, 8/30/07

MATH 54, FALL 2007

*Show your work and justify your answers! Feel free to use both sides.*

**Name:**

**ID:**

1. (5 pts) Suppose we have a system of equations in 5 variables  $x_1, x_2, x_3, x_4, x_5$  and we've taken it and rewritten it as an augmented matrix and we've gotten it into reduced row-echelon form as:

$$\left[ \begin{array}{ccccc|c} 1 & 0 & 3 & 2 & 0 & 0 \\ 0 & 1 & 5 & 5 & 0 & -2 \\ 0 & 0 & 0 & 0 & 1 & 4 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{array} \right]$$

Find all solutions. (In the matrix, we've used the expected order  $x_1, x_2, \dots, x_5$  for our variables.)

2. (5 pts) Solve the following system of equations by rewriting it as an augmented matrix and getting it into reduced row-echelon form.

$$\left\{ \begin{array}{l} 2x_1 + 2x_2 + 4x_3 = -2 \\ x_1 + 2x_2 + x_3 = 0 \\ 2x_1 - 6x_2 - 4x_3 = -2 \end{array} \right\}$$