MATH 2270

Quiz #1 - Fall 2008

Name: _____

1. (5 points) Consider the following linear system

$$\begin{aligned} x - 2y &= 3 \\ 2x - y &= 9. \end{aligned}$$

   (a) Write the corresponding augmented matrix.

   (b) Use Gauss-Jordan elimination to convert the augmented matrix to reduced row-echelon form. Clearly show each step.

   (c) Solve for x and y.

2. (4 points) True or false. Determine if the following statements are true or false.

   (a) There exists a system of three linear equations with three unknowns that has exactly three solutions.

   (b) If A is a 3 x 4 matrix and $\vec{v}$ is a vector in $\mathbb{R}^4$, then the vector $A\vec{v}$ is in $\mathbb{R}^3$.

3. (2 points) Let A be a 3 x 2 matrix of rank 2. Then rref(A) =