MATH 544 Quiz #3 Name:_____
Spring, 2009

1. Let $A = \begin{bmatrix} 8 & -18 & -24 \\ 0 & 2 & 0 \\ 2 & -6 & -6 \end{bmatrix}$ and assume that $A\mathbf{x} = \mathbf{b}$ is consistent for some particular, but unspecified, vector $\mathbf{b}$. Is the solution unique or not? Why? If it is not, how are multiple solutions obtained?

2. Give the matrix A associated to the linear transformation $T\colon \mathbb{R}^3 \to \mathbb{R}^2$, where $T(\begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix}) = \begin{bmatrix} 3x_1 - 2x_2 \\ -x_1 + x_2 - x_3 \end{bmatrix}$.