Math 304 Spring 2010
2/11/2010
Quiz #3 Name: _____

Show all work clearly and in order. Please box your answers. 10 minutes.

1. Let $T = \begin{bmatrix} 1 & 3 & -1 & 2 & 1 \\ -2 & -6 & 3 & 4 & 2 \end{bmatrix}$

   Suppose that T is used to define a function in the usual way.

   (a) Compute the rank of T.

   (b) What is the domain of T?

   (c) What is the codomain of T?

   (d) Is T onto? Why or why not?

   (e) Is T one-to-one? Why or why not?

   (f) Is T a one-to-one correspondence? Why or why not?

2. Let

$$A = \begin{bmatrix} 1 & 1 \\ 2 & 1 \end{bmatrix}, \quad B = \begin{bmatrix} -1 & 0 & 2 \\ 0 & 3 & 5 \end{bmatrix}$$

   (a) Is the product AB defined? If so compute it.

   (b) Is the product BA defined? If so compute it.