Home Work #3

Due April 22, 2009.

1. **Reading Assignment**. Sections 2.3 and 2.4 of the text book. Make sure you feel very comfortable with the material in section 2.2 as most calculations depend on it.

2. Do the following problems from the textbook: 2.1.20, 2.1.26, 2.1.28, 2.2.2, 2.2.8, 2.2.10, 2.2.20 (*Hint*: see problem 2.2.21), 2.2.36, 2.2.42, 2.2.50.

3. Show that every $m \times n$ matrix A can be written as the product of an $m \times r$ matrix and an $r \times n$ matrix, where r is the rank of the matrix A. Write the matrix
$$\begin{bmatrix} 1 & 3 & 3 & 2 \\ 2 & 6 & 9 & 7 \\ -1 & -3 & 3 & 4 \end{bmatrix}$$
as the product of a 3×2 matrix and a 2×4 matrix. *Hint*: See problem 2.2.28.