MATH 280-01 (122)
HW # 1

Q1. Find the value(s) of k (if any) for which the system:

$$\begin{aligned} x_1 + 2x_2 - 2x_3 &= 4 \\ 3x_1 - x_2 + x_3 &= 2 \\ 2x_1 - 3x_2 + 3x_3 &= k \end{aligned}$$

a) is consistent
b) has a unique solution

Q2. Give an example of two nonzero 2 X 2 matrices A and B such that $AB = O$ (other than the one given in your book!)

Q3. Give an example of two nonzero 2 X 2 matrices A and B such that $AB = BA$

Q4. Give an example of a 3 X 3 matrix A such taht $A^T = A$

Q5. Find $2AB$ where

$$A = \begin{bmatrix} 1 & -3 & 0 & 4 \\ -2 & 5 & -8 & 9 \end{bmatrix}$$

and

$$B = \begin{bmatrix} 8 & 5 & 3 \\ -3 & 10 & 2 \\ 2 & 0 & -4 \\ -1 & -7 & 5 \end{bmatrix}$$