REMINDEERS:

Collaboration is allowed (and even encouraged) when working on homework problems. However, each student must write-up and submit an independent solution in his/her own words. Solutions should clearly indicate any collaborators, by listing names. For example, “Collaborators with George P. Burdell on Assignment 1: Cal Q. Luss and Allie Gebra.”

Assignments must be neatly and clearly written in complete, correct English sentences. Homework must be written on the front side of the page only, and multiple pages must be stapled together. Illegible and/or unintelligible solutions will receive no credit.

Homework is due at the beginning of class and late homework will not be accepted.

1. Section 5.8 # 6. Your proofs may only use results, etc. up to Section 5.8. Hints: can you express matrix multiplication in terms of dot products? For part (c), what do you know about Gauss-Jordan, inverses, and upper triangular matrices?

2. Section 5.15 # 2. Hints: for part (a), can you use Theorem 5.14? For part (b), let $A_i$ be square matrices for $1 \leq i \leq k$ and let $B_k = \begin{pmatrix} A_1 & O & \ldots & O \\ O & A_2 & \ldots & O \\ \vdots & \vdots & \ddots & \vdots \\ O & O & \ldots & A_k \end{pmatrix}$.

3. Section 4.21 # 7. Note that this is the problem about matrix transposition from the last section in Chapter 4.