

## **Math 308H Assignments (Feb 8 – Feb 17)**

### **WebQ B (due Friday 2/10 by 11PM)**

The third quiz this week has been moved to a WebQ, since we really need the class time for Section 3.8 on Friday. This WebQ asks questions about the various dimensions of spaces associated to a matrix (i.e., rank and nullity). So this WebQ does not depend on anything that will be covered in class Friday.

### **READING**

**Given the pressure of time before the midterm, we will cover the sections out of sequence.**

**Section 3.6** is about orthogonality. Orthogonal sets are defined, and orthonormal sets are defined as orthogonal sets where each of the vectors has length 1. We learn about orthogonal bases and how to convert any set into an orthogonal set by the Gram-Schmidt process. There is one COORDINATE/PROJECTION FORMULA that is the key to everything (equation 5b).

**Sections 3.8 and 3.9 are about least squares solutions** to linear equations. This is the math behind the linear regression button on your calculator. Section 3.9 explains what is going on and Section 3.8 gives examples and procedures.

**Section 3.7** is about linear transformations and their matrices. This is an important topic, but we will do it last and maybe take it up further after the midterm.

### **Written Assignment #6 (due Wednesday, 2/15)**

#### **Section 3.6**

#6

#9, 10, 12 (see Example 4 and study the paragraphs prior to the example)

#14, 15, 16, 19

#### **Section 3.8**

#1, 2, 5, 7, 8, 11, 12

#### **Section 3.9**

**In each pair of problems you are asked to find the same  $w^*$  by two distinct methods.**

#1 and 11

#5 and 14