Notes on Exam 2, Math 544, Summer 2006

1. Exam 2 is Tuesday, June 20. It covers sections 1.7, 1.9, 3.2, 3.3, 3.4, 3.5, and 3.6.

2. Be able to define "column space", "null space", "basis", "dimension", "orthogonal set", "linear independent", "non-singular", "span", "linear combination", "linear dependent".

3. Be able to state and use four theorems about dimension.

4. Be able to state and use the Non-singular Matrix Theorem. (I have also called this the Invertible Matrix Theorem.) This result consists of a huge number of equivalent statements.

5. The material on the old exams which is covered on your exam 2:
   (a) Exam 1's:
   97: 3, 4, 8, 9, 10.
   01: 8, 9.
   02: 5, 6, 8, 10.
   Spring 03: 4, 5, 6, 9, 10.
   Summer 05: 3, 6.
   Fall 05: 3, 5.
   Summer 06: 3, 5, 7.
   (b) Exam 2's:
   97: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.
   98: 1, 2, 3, 4, 7, 8, 10.
   01: 1, 2, 8, 9.
   02: 6.
   Spring 03: 1, 2, 3, 4cde, 5, 6, 7, 8.
   Summer 03: 1, 2, 3, 5, 6, 7, 8, 10.
   04: 3, 4, 5, 6, 7, 8, 9, 10.
   Summer 05: 2, 3, 4, 5, 7.
   Fall 05: 2, 3, 4, 5, 6, 7, 9, 10.
   (c) Exam 3's:
   97: 1, 2, 3, 4, 5, 6, 7, 8.
   98: 1, 2, 3, 4, 5, 6, 7, 8, 9.
   01: 3, 4, 8, 9.
   02: 1, 2, 3, 7, 8, 9, 10.
   Spring 03: 1, 2, 3, 4 ,5, 6, 7, 8, 9.
   Summer 03: 1, 2, 3, 4, 5, 6, 7, 8, 9.
   04: 1, 2, 3, 4, 7, 8, 9.
   Summer 05: 1, 2, 3, 4, 5, 6, 7.
   Fall 05: 1, 2, 3, 45, 6, 7, 8, 9, 10.
   (d) Exam 4's:

97: 6, 10.
98: 1, 2, 4, 5, 6, 7.
01: 1, 2, 3, 4, 5, 8, 9, 10.
02: 2, 8, 9.
Spring 03: 7, 8.
Summer 03: 1, 2, 5, 6, 7, 9.
04: 1, 6.
Summer 05: 1, 2, 5.
Fall 05: 5.

(e) Final Exams:

97: 1, 3, 4, 6, 7, 8 (Notice that A and b for 6, 7, and 8 are given above problem 6.), 13, 15, 16, 17.
98: 1, 7, 9, 11, 14, 17.
01: 1, 2, 3, 4, 7, 8, 9, 10 abcd, 13.
02: 1, 3, 8, 9, 11, 13, 16.
Spring 03: 10, 11, 12, 18, 20.
Summer 03: 1, 2, 3, 7, 10, 12, 13, 14, 16, 17 defgh.
04: 1 cdefg, 2, 4, 6, 12, 13, 14.
Summer 05: 1 cdefg, 2, 6, 8, 11.
Fall 05: 1cdefg, 2, 3, 6, 7, 10, 13, 14, 15, 16.