

Math 2210Q-001 Review Sheet for Exam 1

Exam 1 will be Tuesday, February 24, 2009, in class, MSB 215.

Covering text sections 1.1-1.5, 1.7-1.9, 2.1-2.3, and 2.5.

Review Suggestions:

- * Use Supplemental Exercises lists for Chapters 1 (pg 102) and 2 (pg 183) to assess your mastery of the material. Try the following questions from the Supplementary exercises:
 - Chapter 1: 1, 3, 4, 5, 6, 8, 9, 10, 12, 13, 14, 15, 16, 18, 19, 22
 - Chapter 2: 1-3, 6, 8, 9, 10, 13, 14, 15, 17, 18
- * Reread and study class notes!
- * Rework class worksheet and quizzes with books and notes closed.
- * Rework exercises from the various sections as time permits, again without referring to your notes or other parts of the text.
- * Take advantage of regular and special instructor office hours to clarify any points that you are not completely clear about.

Things to concentrate on:

- Sections 1.1 & 1.2: Consistency, elementary row operations, pivots, echelon form, reduced echelon form, solutions of linear systems by row-reduction of the augmented matrix
- Section 1.3: Linear combinations, span of a set of vectors.
- Sections 1.4 & 1.5: Matrix-vector product, Theorems 3 & 4, colored and boxed statement on pgs 42, 50 and 54, Theorem 6
- Section 1.7: Definition of linear dependence/independence, colored and boxed statements on pp. 66 & 67, Theorems 7, 8 & 9
- Sections 1.8 & 1.9: Definition and properties boxed on pgs 77 & 87, Theorems 10, 11 & 12
- Section 2.1: Definition of matrix multiplication (pg 110), and the boxed and colored statements on pgs 110, 111, 114, and 115, facts about matrix arithmetic (Theorems 1 & 2), the transpose of a matrix (including Theorem 3)
- Section 2.2: Theorems 4, 5 & 6 and boxed and colored statements on pgs 122-123, how to determine whether a given matrix is invertible (Theorem 7 and algorithm, pg 124)
- Section 2.3: Theorem 8 and the additions to this theorem as discussed in class. The standard matrix of an invertible linear transformation vs. the standard matrix of the inverse linear transformation (Theorem 9)
- Section 2.5: The algorithm for finding an LU decomposition, pg 145. How to use the LU decomposition in solving systems of equations.