MATH-332: Linear Algebra <u>Chapter</u>: 1

<u>Linear Equations in Linear Algebra</u>

<u>Section</u> 1.1: Systems of Linear Equations

pgs. 2-13 *June 15, 2009*

<u>Lecture:</u> Systems of Linear Equations

Topics:	• Systems of Linear Equations • Solution Sets • Matrix Notation • Solutions via Elementary Row operations
Problems	• Prac: 1-4 • Prob: 7, 11, 13, 19, 23, 25

Section Goals

- Understand the geometric and algebraic properties of systems of linear equations.

- Devise a method for finding general solution sets of systems of linear equations.

Section Objectives

- Define the relevant notation associated with systems of linear equations. In particular, highlight the equivalence between linear systems, $\mathbf{Ax} = \mathbf{b}$, augmented matrices and linear combinations of vectors.

- Define the algebraic meaning of solutions and its geometric interpretation.

- Define the row-reduction algorithm in connection to the algebra of linear systems and use it to define the general solution of a linear system of equations.