

Chapter 1 Key Terms/Terminology

Section 1.1

Linear equation
Unknowns
Solution to a linear equation
Linear system
Solution to a linear system
Method of elimination
Unique solution
No solution
Infinitely many solutions
Manipulations on a linear system

Section 1.3

Summation notation
Dot product (inner product)
Product of matrices (matrix multiplication)
Coefficient matrix
Augmented matrix (tied to linear systems)
Submatrix

Section 1.4

Properties of matrix addition
Additive identity or zero matrix
Additive inverse or negative of a matrix
Properties of matrix multiplication
Identity matrix
Powers of a matrix
Properties of transpose
Symmetric matrix
Skew symmetric matrix

Section 1.5

Matrix transformations
Mapping (function)
Image
Range
Reflection
Projection
Dilation
Contraction
Rotation

Section 1.8

LU-factorization
Matrix factorization
Forward substitution
Back substitution

Section 1.2

Matrix
Rows
Columns
Size of a matrix
Square matrix
Main diagonal of a matrix
Element (or entry) of a matrix i th element
 (i,j) entry
 n -vector (or vector)
Diagonal matrix
Scalar matrix
 $\mathbf{0}$, the zero vector
 R^n , the set of all n -vectors
 C^n , the set of all complex n -vectors
Google
Equal matrices
Matrix addition
Scalar multiplication
Scalar multiple of a matrix
Difference of matrices
Linear combination of matrices
Transpose of a matrix
Upper triangular matrix
Lower triangular matrix
Closure (not in the text)

Section 1.6

Reduced row echelon form
Leading one
Row echelon form
Elementary row operation
Row equivalent
Pivot
Gauss-Jordan reduction
Gaussian elimination
Back substitution
Consistent linear system
Inconsistent linear system
Homogeneous system
Trivial solution
Nontrivial solution

Section 1.7

Inverse
Nonsingular (or invertible) matrix
Singular (or noninvertible) matrix