Chapter01 Introduction

1. A System has input and output
2. Linear System
    a) Persevering Multiplication
    b) Persevering Addition
3. Applications
    a) Circuit
    b) Fourier Transform
    c) Google PageRank
    d) Computer Graphics

Chapter02 Linear System = System of Linear Equations

1. Derivative and integral are both linear system
2. A system of Linear Equation is described as a linear system (Trivial)
3. A linear system is described by a system of linear equations

Chapter03 Vector

1. Column Vector Row Vector
2. If a vector has less than four components, you can visualize it
3. A vector set can contain infinite elements

Chapter04 Matrix

1. A matrix is a set of vectors
2. The matrix is called square if m = n
3. Identity matrix: diagonal numbers are 1, other numbers are 0

Chapter05 Matrix-Vector Product

1. Row Aspect: Inner Product
2. Column Aspect: Scaling of Column Vector in the Coefficient-Matrix
3. A and B are matrices, if Aw = Bw for all w in Rn, then A = B