

Introduction to Week Three

Gaussian Elimination

Operation Counts

- ✓

Video: Operation Counts | Lecture 27
9 min
- ✓

Reading: Estimating Computational Time using Operation Counts
5 min
- ▶

Video: Operation Counts for Gaussian Elimination | Lecture 28
8 min
- ✓

Reading: Summation Identities
10 min
- ▶

Video: Operation Counts for Forward and Backward Substitution | Lecture 29
6 min
- 📖

Reading: Operation Counts for a Lower Triangular System
10 min

Eigenvalues and Eigenvectors

Matrix Algebra in MATLAB

Systems of Nonlinear Equations

Quiz

Programming Assignment:
Fractals from the Lorenz
Equations

Summation Identities

Derive the following summation identities:

- (a) $\sum_{k=1}^n 1 = n;$
- (b) $\sum_{k=1}^n k = \frac{1}{2}n(n + 1);$
- (c) $\sum_{k=1}^n k^2 = \frac{1}{6}n(2n + 1)(n + 1).$

✓ Completed

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