

Introduction to Week Three

Gaussian Elimination

- ✓

**Video:** Gaussian Elimination without Pivoting | Lecture 24  
11 min
- ✓

**Reading:** Round-off Errors in Gaussian Elimination  
10 min
- ✓

**Video:** Gaussian Elimination with Partial Pivoting | Lecture 25  
5 min
- ✓

**Reading:** Reduced Round-off Errors in Gaussian Elimination with Partial Pivoting  
5 min
- ✓

**Video:** LU Decomposition with Partial Pivoting | Lecture 26  
10 min
- ✓

**Reading:** The (PL)U Decomposition of A  
10 min

Operation Counts

Eigenvalues and Eigenvectors

Matrix Algebra in MATLAB

Systems of Nonlinear Equations

Quiz

Programming Assignment:  
Fractals from the Lorenz  
Equations

# The (PL)U Decomposition of A

Let

$$A = \begin{pmatrix} -3 & -2 & -1 \\ -6 & -6 & -7 \\ -3 & -4 & -4 \end{pmatrix}.$$

Using Gaussian elimination with partial pivoting, find the (PL)U decomposition of A, where U is an upper triangular matrix and (PL) is a psychologically lower triangular matrix.

✓ Completed

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