

Math 244

First-Order DEs

- Linear vs. nonlinear
- Slope fields
- Integrating factors
- Separable equations
- Homogeneous of degree 0

Linear Algebra: Part 1

- Vectors & matrices
- Reduced Row-Echelon Form
- Determinants
- Subspaces
- Span & linear dependence

Higher-Order DEs

- Linear with constant coefficients
 - Homogeneous
 - Characteristic equation
 - Nonhomogeneous
 - Annihilators

Linear Algebra: Part 2

- Eigenvalues & Eigenvectors
 - Definition & properties
 - Computation
- Generalized eigenvectors

Linear Systems of DEs

- Converting higher-orders DEs
- Finding solutions via:
 - Eigenvectors
 - Generalized eigenvectors