Review Topics

(A) Linear ODEs

(B) Systems of ODEs

Linear ODE Review

(A) General properties of linear ODEs, espeicaly homogeneous

(B) How to use the characteristic polynomial to solve constant coefficient homogeneous linear ODEs

- Distinct real roots
- Complex roots
- Repeated roots

(C) How to use undetermined coefficients to solve constant coefficient non-homogeneous linear ODEs

(D) Application to mass-on-a-spring problems

Also, give qualitative descriptions of solutions

Systems of ODEs Reveiw

Fair game for Midterm 2:

(A) General properties of systems of ODEs

(B) General properties of systems of linear ODEs, especially homogeneous

(C) Eigenvalue technique for real and complex eigenvalues (I will not include defective eigenvalues on this test, but they will be on the final)

(D) Phase plane for systems (where is each function inc/dec? role of eigenvectors?)