

Math 285 - Intro Differential Equations
Spring 2011, sections G1 and X1
Midterm 2 Review Sheet

Midterm 2 covers material from week 7 up to week 12 (section 3.8), lectures and homework. The emphasis is on solving equations and on applications, not on the theory.

Here is a complete list of topics.

- §3.5 Non-homogeneous equations: undetermined coefficients.
- §3.5 Variation of parameters.
- §3.6 Forced oscillations: modeling physical problems.
- §3.6 Undamped forced oscillations and resonance.
- §3.6 Damped forced oscillations, steady periodic solution, and practical resonance.
- §9.1/9.2 Fourier series: computing the Fourier series of a $2L$ -periodic function. Blue box with (6)-(8) on page 590.
- §9.2 Convergence theorem 1.
- §9.3 Fourier cosine and sine series. Blue box with (11)-(14) on page 600.
- §9.3 Formal Fourier series solutions, in particular for endpoint problems.
- §9.4 Forced oscillations with periodic forcing. Fourier series for the steady periodic solution.
- §3.8 Eigenvalue problems: finding the eigenvalues and eigenfunctions.