

Math 246, Jeffrey Adams

Review for Test 2, Friday, October 19, 2018

Chapter II

Section II.1 :

- (Sections II.1.1-II.1.4) Overview of higher order linear equations

Section II.2 : Homogeneous Equations

- 2.1 Linear differential operators
- 2.2 Superposition
- 2.3 Wronskians
- 2.4 Fundamental sets of solutions; general solutions
- 2.5 Natural fundamental set of solutions

Section II.4 Constant coefficient

- 4.1 Characteristic polynomial, key identity
- 4.2 Real roots
- 4.3-4.4: Complex roots
- 4.5 Summary

Section II.5 Nonhomogeneous equations

- 5.1 Particular and general solutions
- 5.2 Solutions of initial value problems

Section II.6 Constant Coefficient Nonhomogeneous

- 6.1 Degree, characteristic and multiplicity $(d, \mu + i\nu, m)$
- 6.2 Key identity method
- 6.3 Undetermined coefficient method
- 6.4 Composite characteristic form
- 6.5 Green functions
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Section II.8 Springs (mechanical vibrations)

- 8.1: the setup
- 8.2: Unforced, undamped
- 8.3: Unforced, damped