Math 246, Jeffrey Adams

Review for Test 3, Friday, November 16, 2018

Chapter II

Section II.7 : Nonhomogenous equations with variable coefficients

- Variation of Parameters
- Green Functions (second order)

Section II.9 : Laplace Transform Methods

- 9.1 and 9.2: Definition and properties of the transform
- 9.4: Laplace transform and derivatives
- 9.5: Solving initial value problems
- 9.6: Inverse transform
- 9.7: Green functions
- 9.8: Natural fundamental sets
- 9.9: Step functions

Chapter III

Section III.1 : Introduction

- 1.1: Introduction
- 1.2: Initial value problems
- 1.3: Higher order converted to a first order system
- Note covered on this exam: numerical methods, tank problems

Section III.2 : General methods and theory

- 2.1-2.2: general theory
- 2.3: Wronskians
- 2.4: Fundamental sets of solutions
- 2.5: Natural Fundamental set of solutions

Section III.5 : Eigen methods

- 5.1: Eigenpairs
- 5.2: solving first order equations
- 5.3: 2×2 case

Section III.4 : Matrix Exponentials

- 4.2: matrices, polynomials, characteristic polynomials, Cayley-Hamilton, matrix key identity
- 4.3: natural fundamental set method
- 4.4: 2×2 formulas