

Differential Equations – Homework 9

Professor:

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Homework 9

Chapter 1.6 in the textbook covers reducible second order equations, examples 10 and 11 are good.

We are starting Chapter 3. The videos covered the important topics from 3.1 and 3.2 . 3.1 discusses second order equations and 3.2 generalizes those results to higher order equations.

- Glance over these pages and make sure you understand the definitions for:
- Homogeneous vs Nonhomogeneous second order linear equations
- Principle of Superposition
- Linear Independence and the Wronskian
- How to write a general solution for a second order linear homogeneous equation

Then read ahead Chapter 3.3 pages 170-172. You can stop after Example 1.

Directions: Do the following book problems

From the book:

Chapter 1.6 Problems 43, 45

Chapter 3.1 Problems: 3, 5, 11, 20, 24, 25

Other Notes:

1. Problems 3, 5, and 11 are asking you to first plug the given solutions individually into the ODE and show that they are solutions. Then write the solution as the sum of the two given solutions, and finally find c_1 and c_2 using the given initial conditions.
2. Use the Wronskian and the division tests to show linear independence.
3. Find a table of trigonometric identities and print it out so you have it handy.