

Differential Equations – Advanced Problem Set 4

Professor:

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Directions: Do the following book problems

Chapter 3.3 Problems: 51 and 52

Chapter 3.5 Problems: 44 - these types of problems do end up being very messy. Go slow with your algebra. The most important thing to get correct is the guess for y_{nh}

Chapter 3.5 Problem: 57

Other Notes:

1. HINT: For number 52, we are applying what you found in Chapter 3.1 #51 and Chapter 3.3 #51. Use the substitution $v = \ln(x)$ and then solve the resulting ODE.
2. HINT for 44, you will need to look up trigonometric identities for these $f(x)$ terms. Your goal is to rewrite $f(x)$ so that it is in a "nice" form.
3. PROBLEM 57 - the book says verify the complementary solution - in our words this means verify that the given function is the homogeneous solution. Complementary = Homogeneous and Particular = Non-homogeneous.