Differential Equations

Math 341 Fall 2009 — Fowler 110 MWF 2:30pm - 3:25pm

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Week 14

Monday November 30 : *Worksheet 28*

Laplace Transform and Second-Order Equations. We shall learn how to apply Laplace Transforms to solve second-order ordinary differential equations of the form $y'' + py' + qy = f(t)$.

Reading:

Blanchard, Section 6.3

Homework #28:

Blanchard, Section 6.3: 5, 6, 8, 9, 10, 15, 18, 27, 28.

Wednesday December 2 : *Worksheet 29*

Laplace Transform and the Delta Function. We shall be introduced to one of the strangest function in all of mathematics, the Dirac Delta Function, $\delta(t)$ and how it can be used to solve linear second order ODEs that have an impulse forcing using Laplace Transforms.

Reading:

Blanchard, Section 6.3 and 6.4

Homework #29:

Blanchard, Section 6.3: 5, 6, 8, 9, 10, 15, 18, 27, 28.

Blanchard, Section 6.4: 1, 2, 5, 7, 8.

Friday December 4 : *Worksheet 30*

Laplace Transforms and Convolutions. We shall discuss the equivalent of the product rule for Laplace Transforms and be introduced to the concept of the convolution of two functions.

Reading:

Blanchard, 6.5

Homework #30:

Blanchard, Section 6.5: 2, 5, 6, 9.

Quiz:

Reading Quiz #4.