

Introduction to Differential Equations – Math 286 X1
Fall 2009
Homework 4 — due September 23

1. Solve the initial value problem

$$y'' - y = 0, \quad y(0) = 1, \quad y'(0) = 2,$$

and now solve

$$y'' - y = 0, \quad y(0) = 0, \quad y'(0) = -1.$$

2. Solve the initial value problem

$$y'' + y = 0, \quad y(0) = 1, \quad y'(0) = 2,$$

and now solve

$$y'' + y = 0, \quad y(0) = -1, \quad y'(0) = 0.$$

3. In each of the following problems, you should give the general solution of the differential equation (i.e. do steps 1 & 2 as described in class)

(a) $y'' - 2y' + y = 0,$

(b) $y'' - 3y' + y = 0,$

(c) $y'' - y' + y = 0,$

(d) $y' - 2y = 0,$

(e) $y'' - 2y' = 0,$

(f) $y''' - 2y'' = 0.$