Third Exam
Wednesday, November 8, 2017

This exam is closed book, but you may use calculators. Make sure your name is on all pages. Show all work, and show it in a logical and organized manner. Each part of each problem is worth 33 points, and 1 point is free.

Find the terms up to and including degree 4 for the series solution of the following problems.

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

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

(c) $\quad y'' + xy = \sin(x), \quad y(0) = 1, \quad y'(0) = 0.$