Differential Equations, Fall 2016 Quiz 5, Sep 23

Name: _____ Section: 007

You must show all your work to receive credit. Calculators are allowed.

Problem 1: (3 points) Find the general solution to

$$y'' + 8y' + 16y = 0.$$

Solution:

Characteristic equation is

$$k^2 + 8k + 16 = 0$$
$$(k + 4)^2 = 0$$
$$k = -4 \text{ double root}$$

General solution is

$$y = C_1 e^{-4x} + C_2 x e^{-4x}.$$