

Math 307 - Differential Equations - Spring 2017

Quiz 6

March 16, 2017

Name: Solutions

Problem 1. Find the general solution of the differential equation

$$3y'' + 6y' + 3y = 0.$$

Char. Poly.: $3r^2 + 6r + 3 = 0$
 $\Rightarrow 3(r+1)^2 = 0, r = -1^*$

$$y = c_1 e^{-x} + c_2 x e^{-x}$$

Problem 2. Find the general solution of the differential equation

$$y'' + 81y = 0.$$

Char. Poly.: $r^2 + 81 = 0$
 $\Rightarrow r = \pm 9i$

$$y = c_1 \cos 9x + c_2 \sin 9x$$