October 31,2013

QUIZ♯1 Math202-sec8.

Net Time Allowed: 25 minutes

Name: **ID ♯ :** **Serial ♯:**

Exercise1:

Consider the differential equation $y'' - 4\,y' + 4\,y = 0.$ (1)

(a) Find the interval in which the two solutions $y_1 = e^{2x}$ and $y_2 = xe^{2x}$ are linearly independent.

(b) Form the general solution for the differential equation (1).

Exercise2:

1)-Verify that $y = c_1 e^t \sin 2t + c_2 e^t \cos 2t$ is a two-parameter family of solution of the (DE):

$$y'' - 2y' + 5y = 0$$

2) Determine whether a member of the family can be found that satisfies the boundary conditions:

a) $y(0) = 1,\ y(\pi) = -1$ b) $y(0) = 1,\ y\left(\frac{\pi}{4}\right) = 2.$