

QUIZ III:MATH 274

February 24, 2012.

NAME: _____

SHOW ALL WORK ON THIS SHEET

1. [6pts] Find the general solution of the homogeneous problem:

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

2. [6pts] Find the unique solution of the following initial value problem

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

3. [3pts] Find the general solution of the following third order differential equation

$$y''' - 6y'' + 11y' - 6y = 0$$

given that $r = 3$ is a root of its characteristic polynomial $P(r)$.

4. [5pts] Use the Method of Undetermined Coefficients to find a particular solution $y_p(x)$ of:

$$y'' + 3y' - 2y = 8 - 4x$$