Math 352 **Workshop 07**

March 21, 2014 Due: March 31 Name: _____

Reduction of order

Reduction of order is a general method for finding a second solution to a second-order linear differential equation if one solution is already known.

1. Verify that $y_1(t) = t^2$ is a solution of the differential equation $t^2 y'' - 4ty' + 6y = 0,\ t > 0$.

2. Use reduction of order to find a second solution.

3. Use undetermined coefficients to find particular solutions of:

   (a) $y'' - 3y' - 4y = 3e^{2t}$

   (b) $y'' - 3y' - 4y = 2\sin t$

   (c) $y'' + 10y' + 16y = 14e^{-t}$