Math 205, Differential Equations

Quiz 8

1. A force of 2 pounds stretches a spring 1 foot. A 3.2 pound weight is attached to the spring, and the system is then immersed in a medium that imparts a damping force numerically equal to 0.4 times the instantaneous velocity. Find the equation of motion if the weight is released from rest 1 ft above the equilibrium position.

2. Use the power series method to solve the given initial-value problem.

$$(x - 1)y'' - xy' + y = 0, \quad y(0) = -2, \quad y'(0) = 6$$