

HOMEWORK 6 (PRACTICE MIDTERM), M 331
DUE 3/26/09

Problem 1. Calculate the impact velocity of an object of mass 140 pounds dropped from a height of 30 feet, assuming the air drag coefficient is 1.

Problem 2. Find the solution to the ODE $y' + t^2y = 5t^2$ with initial condition $y(0) = 0$.

Problem 3. Solve the ODE $dx + (x/y - \sin y)dy = 0$.

Problem 4. Find the solution of the ODE $y'' - 2y' - 3y = 0$ with initial conditions $y(0) = 1$ and $y'(0) = 0$.

Problem 5. Find the general solution of the ODE $y'' + 2y' + 5y = 0$.

Problem 6. Solve the ODE $4y'' + 4y' + y = 0$ with initial condition $y(0) = 0$ and $y'(0) = 1$.