

Instructor: Leopoldo P. Franca

NAME: _____

TEST # 1:

Please show all your work in the test. Gussed answers are NOT acceptable. You may use calculators. Good luck!

(25 pt) 1) Solve $\frac{dy}{dx} + 2xy = 2xe^{-x^2}$.

(25 pt) 2) Solve $x dx + ye^{-x} dy = 0$, $y(0) = 1$.

(25 pt) 3) Solve $(y^2 - xy) dx + x^2 dy = 0$.

(25 pt) 4) An object of mass m is dropped from the rest in a medium offering resistance proportional to the magnitude of the velocity. Find the time interval that elapses before the velocity of the object reaches 90% of its limiting value.