Student Name:_____ Student Number: _____ Serial No.:_____

Instructor: M. Z. Abu-Sbeih Math - 260.1 Quiz No. 1 Date: 10-7-2005.

Show all your work. No credits for answers without work.

Problem 1: The population $x = x(t)$ of bacteria in a certain colony has a time rate of growth proportional to x itself. If the population tripled in 3 hours, how long will it take the population to become 10 times what it was initially?

Problem 2: Solve the initial value problem: $y\frac{dy}{dx} = e^{x-y^2}, \qquad y(0) = 0.$

Problem 3: Solve the differential equation: $y' - y\tan x = 2\sin x.$