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

Instructor: M. Z. Abu-Sbeih Math - 260.1 Quiz No. 2 Date: 16-7-2005.

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

**Problem 1:** Find the general solution of $\frac{dy}{dx} = x + xy^2$.

**Problem 2**: Solve the initial value problem: $\frac{dy}{dx} + \frac{1}{x}y = \ln x, \qquad y(1) = 1.$

**Problem 3:** Find the general solution of $xy\,y' = y^2 + x\sqrt{4x^2 + y^2}$

**Problem 4:** Show that the equation is exact and solve: $(3x^2 + 2y^2)dx + (4xy + 6y^2)dy = 0$