

**King Fahd University of Petroleum and Minerals**  
**Department of Mathematics and Statistics**

Semester (112)

April 18, 2012

Math 260

Quiz 3

Name: .....

ID: .....

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**Exercise 1.** Solve the differential equation

$$xydx - (x^2 + 1)dy = 0.$$

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**Exercise 2.** Solve the following DE:

$$(e^{2y} - y \cos(xy))dx + (2xe^{2y} - x \cos(xy) + 2y)dy = 0.$$

**Exercise 3.** Find the general solution of the following DE:

$$x \frac{dy}{dx} + (1+x)y = e^x.$$

**Exercise 4.** A cup of coffee (temperature =  $190^\circ F$ ) is placed in a room whose temperature is  $70^\circ F$ . After five minutes, the temperature of the coffee has dropped to  $160^\circ F$ . How many more minutes must elapse before the temperature of the coffee is  $130^\circ F$ ?