

Homework 1 (MATH 5400-01)**Name (Print):****Due date: Friday, Sept. 14, 2012**

1. Solve this problem:

$$x u_x + u_y = 1, \quad u(x,0) = e^x$$

2. Solve this problem:

$$x u_x + (y^2 + 1) u_y = 1, \quad u(x,0) = e^x$$

3. Solve this problem:

$$x u_x + (y^2 + 1) u_y = u, \quad u(x,0) = e^x$$