Math 307 Quiz 1

April 9, 2014

Problem 1. What does it mean for a differential equation of the form

$$M(x, y) + N(x, y)y' = 0$$

to be exact?

Problem 2. What does it mean for $\mu(x, y)$ to be an integrating factor for the equation

$$M(x, y) + N(x, y)y' = 0$$

Problem 3. Show that e^x is an integrating factor for the equation

$$y + y' = e^x$$

Then solve the equation.

Problem 4. Find a solution to the equation $y' = y^2$ satisfying the initial condition $y(0) = 1$