Math 222 Discussion Worksheet #6
Spring 2015

A. \( xy' = -y + x \)

B. \( (x + 1)y' = y - x, \ y(0) = 0 \)

C. \( y'(1 + x^2)\tan^{-1} x = (1 + x^2)e^x - y \)

D. \( y' = y - x, \ y(0) = 0 \)

E. \( y' \cos x = 1 - y \sin x, \ y(0)=1 \)

F. \( y' + \frac{1}{x^2-1}y = \frac{3}{2}\sqrt{1+x} \)

G. Use Euler’s method with a step size of 1 to approximate \( y(3) \) for the following initial value problem.
\[ y' = x^2 - xy - y^2, \ y(1)=1 \]

H. Use Euler’s method with a step size of 0.1 to approximate \( y(0.3) \) for the following initial value problem.
\[ y' = -2xy, \ y(0)=1 \]
Compare with the exact value of \( y(0.3) \).