Quiz 7
Math 230

1. Let y be the solution of the initial value problem

$$y'' + xy' - y = 0, \quad y(0) = 1, \quad y'(0) = 0.$$

Suppose that we represent y as a power series $\sum_{n=0}^{\infty} c_n x^n$ centered at 0.

(a) Find a recurrence relation for the coefficients c_n.

(b) Write down the first three non-zero terms in the power series for y.