

Quiz 8  
Math 230

Consider the differential equation

$$xy'' + y = 0.$$

- (a) Show that  $x = 0$  is a regular singular point.
- (b) Find the indicial equation and determine its roots.
- (c) Write down an appropriate form for the series solution  $y(x)$  corresponding to the *larger* root. Determine a recurrence relation for the coefficients in the series. (Use the back of this quiz if needed...)