

**Math 675**  
Assignment #4  
Due October 5, 2009

Name \_\_\_\_\_

32. Find the leading behavior of the non-oscillatory solution to  $x^4 y''' = y$ .
33. Find the leading behavior of the growing solution to  $y'' = (\cot x)^4 y$ .
34. Find the leading behavior of the non-oscillatory solution to  $x^4 y''' - 3x^2 y' + 2y = 0$ .
35. Find the leading behavior of the larger solution to  $x^4 y'' - x^2 y' + \frac{1}{4}y = 0$ .
36. Find the leading behavior of the second solution to  $x^4 y'' - x^2 y' + \frac{1}{4}y = 0$ .
37. Find the first two terms in the correction to the leading behavior of  $x^4 y'' - x^2 y' + \frac{1}{4}y = 0$ .