Quiz No: 4 Math 202 Name: _____Section_____ID_____

Q1. $x_o = 0$ is an ordinary point of the differential equation $y'' - xy = 0$. The differential equation possesses two linearly independent series solutions. Then the **First Two Terms of Each of the Series Solution** $y_1(x)$ and $y_2(x)$ is equal to:

(A): $y_1 = 1 + \frac{1}{6}x^3$; $y_2 = x + (1/12)x^4$; (B): $y_1 = 1 + \frac{1}{6}x$; $y_2 = 1 + 12x^2$; (C): $y_1 = x + x^3$; $y_2 = 1 + 12x^2$;

(D): $y_1 = x^2 + x^5$; $y_2 = x^2 + 12x^3$; (E): $y_1 = 1 + 6x^3$; $y_2 = x + (1/12)x^4$;

Q2. $x_o = 0$ is a regular singular point of $xy'' + y = 0$. Find roots of the indicial equation. Then use the **Larger Root** of the indicial equation to find that the **SUM** of the **FIRST TWO TERMS** of the series solution **AT X=2** is:

(A): 0 (B): 2 (C): (D): 2/3 (D): $\frac{1}{3}$ (E): 6/7

Q3. In one sentence tell how you will find series **SOLUTION** corresponding to the **SMALLER ROOT** of the indicial equation in Question (2)?