Math 202-112 Quiz 4 (A)

Name:.....ID#:.....Sec#.....Ser#.....

Q.1: Given that $y_1 = x + 1$ is a solution of $(1 - 2x - x^2)y'' + 2(1 + x)y' - 2y = 0$. Use order of reduction formula to find a second solution $y_2(x)$.

Q.2: Find linearly independent functions that are annihilated by $D^3 + 6D^2 + 11D$.

Q.3: Use the method of undetermined coefficients and variation of parameter method to solve

$$y'' - 2y' + y = 4x^2 - 3 + x^{-1}e^x$$