Name of the Student:_____ ID_____Section_____

Quiz No:1 **Math 202** Semester 131

Q1. Verify that $y = e^{-x^2}\int_0^x e^{t^2}\,dt + \alpha\, e^{-x^2}$ is a family of solutions of $y'(x) + 2xy = 1$.

Q2. $y = \alpha e^{x} + \beta e^{-x}$ is a two parameter family of solutions of $y'' - y = 0.$ Find a solution y that satisfies $y(-1) = 5$ and $y'(-1) = 5$

Q3. **Determine** a region of the xy plane for which $(16-y^2)y' = x^2$ would have a unique solution through (x_o, y_o).

Q4. $y = 1/(x^2-1)$ is a unique solution of the initial value problem $y' + 2xy^2 = 0,\ \ y(0) = -1$ in some interval I.
What is that interval?