Quiz No. 4, Math 202

Name_____ID_____Section_____

Q1. Show that $2D-1$ annihilates $y=4e^{\frac{x}{2}}$

Q2. Find function that is annihilated by

$$D^3-10D^2+25D$$

Q3. Write annihilator of

$$y=x+x^2+\frac{2}{3}\cos x+\sin x+e^{2x}$$

. Write annihilator of

$$e^x x^3 \sin 2x$$

Q2. Determine the region in which $y' = \sqrt{y^2 - 16}$ has a unique solution whose graph passes through a point (x_o, y_o).

Q3. Use separation of variables method to find an **explicit** solution of the initial value problem

$$\frac{dy}{dx} = \frac{y^2 - 1}{x^2 - 1}, \quad x(2) = 2$$