

Quiz #8**Name:** _____**StudentID:** _____**Major:** _____**Time:** 20 minutes.

Justify your solutions and show all your steps. Write down formulae used. Make sure to look on the back side of this sheet.

1. Find the derivative of the function

$$y = e^{\sqrt{x^2-1}}.$$

2. Write the equation of the tangent line to the graph $y = xe^{-x}$ at $x = 1$.

3. Find $\frac{dy}{dx}$ for

$$x + y^2 - 4y + 6 = 0.$$

4. Find the slope of the tangent to the curve

$$x^2 + 2xy + 3 = 0$$

at $(-1, 2)$.