Math 233 - Quiz 8

Name _____

October 23, 2025

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (4 points) Identify each quadric surface.

   (a) $4x^2 - 8y^2 + 9z = 1$

   (b) $5x^2 - 6y + 5z^2 = 0$

   (c) $-x^2 + 13y^2 - 3z^2 = 144$

   (d) $(x-1)^2 + 4(y+2)^2 + z^2 = 1$

2. (2 points) Identify and describe the graph of the equation $z + 1 = x^2 + \dfrac{y^2}{4}$.

3. (2 points) Identify and describe the graph of the equation $z = \sqrt{x^2 + y^2}$.

4. (2 points) Let $f(x, y) = x^2 e^{xy}$. Find f_x and f_y.