

**Math 2263, Quiz 4**

**You must show all work for full credit, you have 15 min to finish it.**

1.(5 pt) If  $x^3 + e^y + \sin(z) = 0$ , find  $\frac{\partial z}{\partial x}$  and  $\frac{\partial z}{\partial y}$ .

2.(5 pt) Use the chain rule to find  $\frac{dz}{dt}$  where  $z = x^2y$ ,  $x = \cos(t)$ ,  $y = e^t$ .

3.(5 pt) Find the parametric equation of the tangent line to the curve of intersection of quadratic surfaces  $x^2 + y^2 + z^2 = 5$  and  $z = 2x^2 + y^2$  at the point  $(1, 0, 2)$ .