

Name:

Roll Number:

Section: _____

Problem 1. Let $f : \mathbb{R}^3 \rightarrow \mathbb{R}$, define $f(x, y, z) = \sqrt{x^2 + y^2} - z = 0$. Find the tangent plane to the surface f at the point $(3, 4, 5)$.

Problem 2. Find the area between the curves $y = x^2$ and $x = y^2$ in the Cartesian coordinates.

(You can start answering from here)