

Name:

ID #:

Section #:

Q1) [2pts] Sketch the surface $x^2 + 2z^2 - y - 1 = 0$.

Q2) [3pts] Let $f(x, y) = \ln\left(\sqrt{4 - x^2 - y^2}\right)$.

- (a) Find the *domain* and *range* of f .
- (b) Find a level curve of f that passes through the point $(1, 1)$.

Q3) [5pts] (a) Find an equation for the *plane* that passes through the point $P(1, 2, 3)$ and contains the line $L : x = 1 - 2t, y = t, z = 3 - t$.

- (b) Find the distance from the point P to the line L .