

February 27, 2004

Show all work for credit.

1. Find an equation of the tangent plane of the surface at the specified point.

(a)  $z = y^2 - x^2$  at the point  $(1, 2, 18)$

(b)  $z = e^x \ln y$  at the point  $(3, 1, 0)$

2. Explain why the function is differentiable at the given point, and find the linearization  $L(x, y)$  of the function at that point.

(a)  $f(x, y) = x/y$  at the point  $(6, 3)$