

**Math 225 : Quiz**

**Oct 16, 1991**

Show your work and circle your final answer.

1. Find all the critical points of

$$f(x, y) = 4y^3 + 6y^2x + 3x^2 + 1$$

2. The function

$$f(x, y) = x^4 + 2x^2(y^2 - 1) + 2y^2$$

has a critical point at  $(0,0)$ . Determine whether this point is a local max, a local min, or a saddle point.