Name: January 29, 2015 MAC 2313.3118 Cyr

> Quiz 3 You must show all work to receive full credit!!

Problem 1. (3 pts) State the type of quadric surface of the equation $y = 3x^2$ and describe the trace obtained by intersecting with the plane z = 27.

Problem 2. (7 pts) Let $\mathbf{r}(t) = \langle 2t^2 + 1, -1, t^3 \rangle$. (a) Find a parametrization of the tangent line $\mathbf{L}(t)$ at the point t = 2.

(b) Compute the length of the curve $\mathbf{r}(t)$ over the interval $0 \le t \le 1$.