Name:
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MAC 2313.3122
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 $(\frac{x}{3})^2 + (\frac{y}{5})^2 - 5z^2 = 1$ and describe the trace obtained by intersecting with the plane $y = 1$.

**Problem 2.** (7 pts) Let $\mathbf{r}(t) = \langle \cos(3t), \sin(3t), 3t \rangle$.
(a) Find a parametrization of the tangent line $\mathbf{L}(t)$ at the point $t = \frac{\pi}{6}$.

(b) Compute the length of the curve $\mathbf{r}(t)$ over the interval $0 \leq t \leq 2\pi$.

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