Math 126A **Calculus With Analytic Geometry III** **Fall 1995**

QUIZ #8 ANSWERS

11/16/95

Suppose $T(p,q)$ is the function

$$T(p,q) = \frac{p}{q+1}.$$

1. Compute the differential dT in terms of dp and dq at the point where $p = 2$ and $q = 3$.

$$dT = \boxed{\tfrac{1}{4}dp - \tfrac{1}{8}dq}$$

2. Suppose the values $p = 2$ and $q = 3$ are known to be accurate to within ± 0.1. Use the differential to *estimate* the maximum (absolute) error in T that could be caused by errors in the values of p and q.

$$\text{Maximum error in } T = \boxed{\tfrac{1}{4}(0.1) + \tfrac{1}{8}(0.1) = \tfrac{3}{80} = .0375}$$