Math 126B **Calculus With Analytic Geometry III** **Spring 1995**

QUIZ #5 SOLUTIONS

We are given that $g(x,y) = xy + \frac{8}{x} + \frac{1}{y}$.

1. Find all critical points of $g(x,y)$.

   Note: this is Problem 20.5 in the lecture notes. Critical points: $\boxed{(4, \frac{1}{2})}$

2. Choose one of the critical points you found above (if there are more than one). By reasoning either with second derivatives as described in lecture, or with directional derivatives as described in the notes, determine which (if any) of the following possibilities applies at the critical point you chose.

   Chosen critical point: $\boxed{(4, \frac{1}{2})}$

   CIRCLE AS MANY AS APPLY:

$\boxed{\textit{Possibly a local minimum}}$	*Possibly a local maximum*
Definitely a saddle point	*None of the above*