

**NAME:** \_\_\_\_\_ (please print clearly)  
(Last, First)

1. (10 points) If  $f(x, y) = xy - x^2 - 2y^2 + 7y + 1$ , find the solutions of  $f_x = 0, f_y = 0$  (these are the *critical points* of  $f$ ).

(b) For each solution use the second derivative test to determine whether the point is a local max, local min or neither.

2. (10 points) Show each step as you evaluate the iterated integral

$$\int_0^1 \left( \int_{\sqrt{x}}^2 x + y^2 dy \right) dx.$$