

NAME: _____

Panther ID: _____

Quiz 4 - Take home - Due Tue. March 9

MAC 2313, Spring 2010

To receive credit you MUST SHOW ALL YOUR WORK.

1. (10 pts) Locate and classify all critical points of the function $f(x, y) = x^3 + 6xy + 3y^2 - 9x$.

2. (10 pts) A wire 120 cm long is cut into three pieces of lengths x , y and $120 - x - y$ and each piece is bent into the shape of a square. Let $f(x, y)$ denote the sum of the areas of these squares. Find the absolute maximum and absolute minimum of the function $f(x, y)$.

Hint: The conditions $x \geq 0$, $y \geq 0$, $120 - x - y \geq 0$ restrict your function to a closed and bounded region.