

Worksheet 9

/ 15 points

Name:

Section: 2 4 (circle one)

1. Let $f(x, y) = x^3 + y^3 + 3x^2 - 3y^2 - 12$.

a) Find the critical points of f .

b) Find f_{xx} , f_{yy} and f_{xy} .

c) Determine if each critical point is a local min, local max or saddle point.

2. Find the absolute minimum and maximum of the function $f(x, y) = 48xy - 32x^3 - 24y^2$ on the rectangular region $0 \leq x \leq 1$ and $0 \leq y \leq 1$.