

**MATH 11: MULTIVARIABLE CALCULUS
WORKSHEET, SECTION 14.7**

Problem 1. Consider the function

$$f(x, y) = y^3 + 3x^2y - 6x^2 - 6y^2 + 2.$$

Find all critical points and classify them (local min? local max? saddle? indeterminate?).

Problem 2. Find the maximum of

$$f(x, y) = x^2 + y^2 + x^2y + 4$$

on the set

$$D = \{(x, y) : |x| \leq 1, |y| \leq 1\}.$$