

## Group work 07: Using the “D-Test” to Match Functions with Graphs

Math 163A Section 02 (Barsamian) Thursday, November 9, 2006

Part 1: Use the “Worksheet for the D-Test” to locate maxima, minima, and saddle points in the functions below. Work in groups of 4 people.

function number	function	saddle points	relative maxima	relative minima	undetermined critical points
1	$f(x, y) = -3xy + x^3 - y^3 + \frac{1}{8}$				
2	$f(x, y) = \frac{3}{2}y - \frac{1}{2}y^3 + x^2y + \frac{1}{16}$				
3	$f(x, y) = y^4 - 2y^2 + x^2 - \frac{17}{16}$				
4	$f(x, y) = -x^4 + y^4 + 2x^2 - 2y^2 + \frac{1}{16}$				
5	$f(x, y) = -y^4 + 4xy - 2x^2 + \frac{1}{16}$				

Part 2: As a class, we will try to match the five functions to their corresponding graphs in the pictures below.

