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2. Find the maximum and minimum on the region

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Recitation due Sep 13, 2021 20:30 IST Completed

Practice

Find the critical point and determine its type

2.0/2 points (graded)

We want to find the absolute maximum and absolute minimum of the function $f(x,y) = x^2 - y^2 - x + 3y - 1$ on the square region $0 \le x \le 2, 0 \le y \le 2$.

First find the critical point of $f(x,y)$ that lies within this region.

(Enter point as an ordered pair surrounded by round parentheses: `(a,b)` .)

(1/2,3/2) ✔ **Answer:** (0.5,1.5)

This critical point is a

- ○ Local maximum
- ○ Local minimum
- ◉ Saddle point
- ○ Cannot be determined

✔

? INPUT HELP

Submit You have used 2 of 25 attempts

Answers are displayed within the problem

Find the maximum and minimum value on the square

4.0/4 points (graded)

Identify the point where $f(x,y)$ attains its absolute maximum value. (Enter point as an ordered pair surrounded by round parentheses: `(a,b)` .)

(2,3/2) ✔ **Answer:** (2,1.5)

The absolute maximum value is: 13/4 ✔ **Answer:** 3.25

Identify the point where $f(x,y)$ attains its absolute minimum value. (Enter point as an ordered pair surrounded by round parentheses: `(a,b)` .)

(1/2,0) ✔ **Answer:** (0.5,0)

The absolute minimum value is: -5/4 ✔ **Answer:** -1.25

? INPUT HELP

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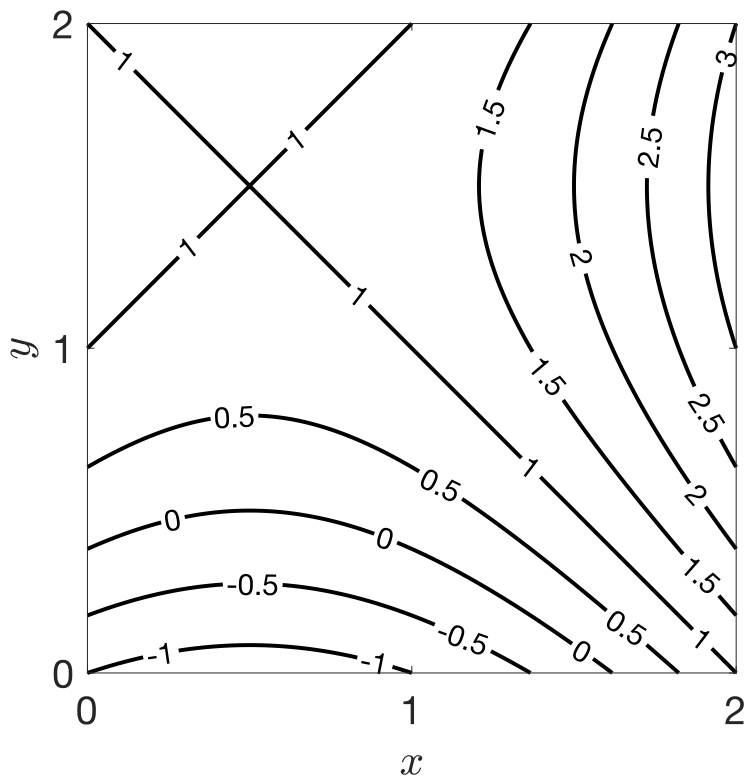
Solution:

The level curves of the function $f(x, y)$ are shown in the image below.



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2. Find the maximum and minimum on the region

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Topic: Unit 3: Optimization / 2. Find the maximum and minimum on the region

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- Things we need to check when finding the absolute max/min of a region — 3
  Are the things we need to check when finding the absolute max/min of a region 1) crit. pts. and their nature; 2) corners; 3) maximum...
- [Staff] Error in grader Find the maximum and minimum value on the square — 4
- [Staff] A quick question. — 2
  Hi Staff, I tried to find the absolute maximum and minimum without using the level curves and did not get the correct answer. I follow...
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