Machine Learning with Python-From Linear Models to Deep Learning

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8. 1D Optimization via Calculus

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Homework0 due Feb 8, 2023 08:59 -03   Completed

Review: 1D Optimization via Calculus

4/4 points (graded)

(For this problem, you are welcome to use any computational tools that would be helpful

Let $f(x) = \frac{1}{3}x^3 - x^2 - 3x + 10$ defined on the interval $[-4, 4]$.

Let x_1 and x_2 be the critical points of f, and let's impose that $x_1 < x_2$. Fill in the next values of x_1 and x_2, respectively: (Recall that the **critical points** of f are those $x \in \mathbb{R}$

$x_1 = $ | -1 | ✔

$x_2 = $ | 3 | ✔

Fill in the next two boxes with the values of $f''(x_1)$ and $f''(x_2)$, respectively:

$f''(x_1) = $ | -4 | ✔

$f''(x_2) = $ | 4 | ✔

Submit   You have used 1 of 3 attempts

Review: 1D Optimization via Calculus (Continued)

3/4 points (graded)

(For this problem, you are welcome to use any computational tools that would be helpfu

Recall that x_1 and x_2 are the critical points of the function $f(x) = \frac{1}{3}x^3 - x^2 - 3x -$
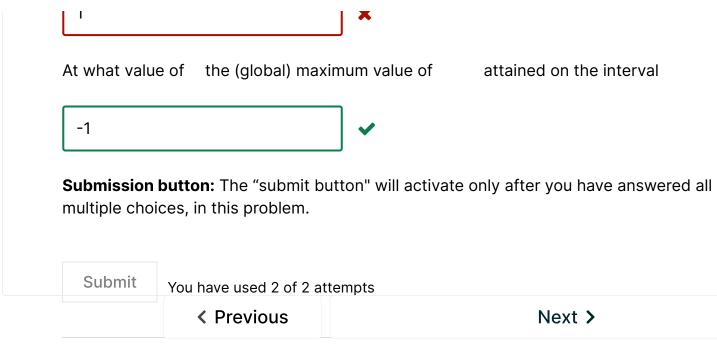
According to the second derivative test, x_1 is a ...

◉ Local Maximum

○ Local Minimum

○ None of the above

At what value of   the (global) maximum value of   attained on the interval

-1   ✔

Submission button: The "submit button" will activate only after you have answered all multiple choices, in this problem.

Submit   You have used 2 of 2 attempts

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