The Second-Derivative Test

Lecture 28
Section 3.2

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Objectives

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- Use the 2nd derivative to determine extreme values.

The Second Derivative Test

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Let $f(x)$ be a function and let c be a critical value of $f(x)$.

- If $f''(c) < 0$, then $f(c)$ is a relative maximum.
- If $f''(c) > 0$, then $f(c)$ is a relative minimum.
- If $f''(c) = 0$, then the test is inconclusive.

Exercise 56

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for $10 \leq x \leq 40$.

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(e) At what point does the company get "the most bang for its buck" in marketing?