Chapter 9. Optimization

Optimum values and Extreme values

First Derivative Test

if the first derivative of a function f(x) if is , then the value of the function at , will be

a) relative max if f'(x) from + to -

b) relative min if f'(x) from - to +

c) relative a relative max nor relative min if f'(x) has the same sign on lotn the immediate left and the inmteringt of point .

Second and Higher Derivatives

find the first through the fifth derivatives of the function

Interpretation of the second derivative

means that the value of the function tends to increase, decrease.

means that the slope of the curve tends to increase, decrease

Second-Derivative Test for relative extremum if the value of the first derivative of a function f at is , then the value of the function at , will be

a) A relative max if

b) A relative min if

This test is more convenient