

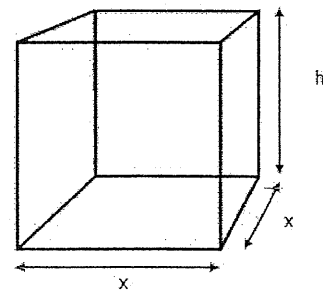
Calculus Optimization Notes

Optimization: Optimization is the process of finding the greatest (maximum optimal solution) or least value of a function (the minimum optimal solution) for some constraint, which must be true regardless of the solution. Optimization finds the most suitable value for a function within a given domain.

Optimization steps:

1. Write equation for variable you want to optimize
2. Substitute to get equation in terms of one variable on one side
3. Find derivative, set derivative = 0 and solve.

Example 1: A manufacturer wants to design an open box having a square base and a surface area of 108 in^2 . What dimensions will produce a box with maximum volume?



Example 2:

A rancher has 200 feet of fencing with which to enclose two adjacent rectangular areas. What dimensions should be used so that the enclosed area will be a maximum?

