

Salahaddin University-Erbil
College of Engineering
Department of Architectural Engineering
First Year Students
2nd Semester



Mathematics I

Optimization (Ch.3)

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Optimization

- To make something useful or effective as possible as.

Example

- A rectangular is to be fitted inside of a semicircle of radius 2, with one side along the semicircles diameter. What is the largest area the rectangle can have? Find the dimensions and area.

Example

- You have been asked to design a 1-liter can shaped like a right circular cylinder. What dimensions will use the least material?

Example

- A closed container is made from a right circular cylinder of radius r and high of h with a hemispherical dome on top. Find a relationship between r and h that maximize volume for given surface area.