

5.5-Applied Max/Min Problems

Goal: To optimize a practical value subject to certain restrictions (often given geometrically)

Examples:

A rectangular box with a square base and no top has volume V . Find the dimensions of the box which minimize its surface area.

A right circular cylinder is inscribed in a right circular cone of radius R and height H . Find the largest possible cylinder.

Find the shortest distance from the point $(10, 0)$ to the circle $x^2 + y^2 = 25$.

A movie screen is 24 feet tall and hangs 6 feet above a level floor. How far away from the screen should a person stand in order to maximize their viewing angle (the angle between the top and bottom views)?

On Your Own: #1, 5, 7, 9, 13, 17, 19, 23, 27, 29, 31, 33, 39