

# PROBLEM 2.5.11

Use the method of Lagrange multipliers to find the maximum and minimum values of the function

$$f(x, y, z) = x^2 + y^2 + z^2$$

subject to the constraint

$$x^2 + y^2 + z^2 = 1$$

on the domain

$$x \geq 0, y \geq 0, z \geq 0$$

of the first octant.

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