Math 261
Optimization Problem

Suppose that a rectangular beam is going to be cut from a cylindrical log of radius 30 inches. Suppose that the strength of a beam with width w and height h is proportional to wh^2 (that is, the bigger wh^2 is, the stronger the beam is). Use Calculus to find the width and height of the strongest beam that can be cut from this log. [See the diagram of a cross-section of the log below]