Math 141 - Calculus   Name_____
Section 4.7 Video Worksheet

Optimization

Show that among all rectangles with an 8-m perimeter, the one with the largest area is a square

A rectangle has its base on the x-axis and its upper two vertices on the parabola $y = 12 - x^2$. What is the largest area the rectabgle can have, and what are its dimensions?

You are planning to close off a corner of the first quadrant with a line segment 20 units long running from $(a,0)$ to $(0,b)$. Show that the area of the triangle enclosed by the segment is largest when $a=b$.

Try It: A 216 m^2 rectangular pea patch is to be enclosed by a fence and divided into two equal parts by another parallel to one of the sides. What dimensions for the outer rectangle will require the smallest total length of fence? How much fence will be needed?