

Lesson 25: Section 4.B (Part 2)

Optimization Strategy

1. Draw a picture and identify variables.
2. Identify the objective function.
3. Identify constraints.
4. Use constraints to make the objective function rely on only one variable.
5. Find the interval of interest.
6. Use calculus to find extrema.
7. Answer the question.

Practice Problems

1. A piece of wire 10 m long is cut into two pieces. One piece is bent into a square and the other is bent into an equilateral triangle. How should the wire be cut so that the total area enclosed is a maximum? A minimum?
2. A Norman window has the shape of a rectangle surmounted by a semicircle. If the perimeter of the window is 30 ft, find the dimensions of the window so that the greatest possible amount of light is admitted.