

4.6 – Applied Optimization, Part I

Applied Optimization problems are real-life applications of maximum/minimum function values.

1. A farmer has 2400 ft of fencing and wants to fence off a rectangular field that borders a straight river. He needs no fencing along the river. What are the dimensions of the field that has the largest area?

2. A veterinarian with 100 m of fencing want to enclose a rectangular area and then divide it into two kennels with fencing parallel to one side of the rectangular region. What is the largest possible total area of the two kennels?

3. Find the point on the parabola $y^2 = 2x$ that is closest to the point $(1, 4)$.

4. How close does the curve $y = \ln(x) - x$ come to the point $(2, 0)$?