

Math 0120
Sections 3.3, 3.4

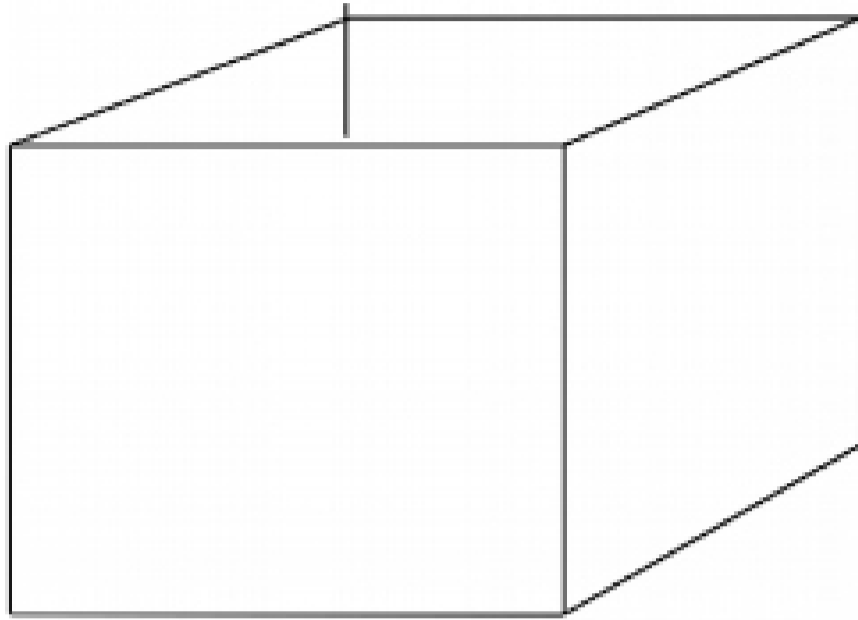
1. A farmer has 1440 feet of fencing to enclose a rectangular lot and divide it into three equal and parallel sub lots as indicated. Find the dimensions that will maximize the enclosed area.



State and solve the dual of this problem.

A farmer wishes to enclose a rectangular lot and divide it into three equal and parallel sub lots as indicated. The lot is to have an area of 64,800 square feet. Find the dimensions that will minimize the amount of fencing required.

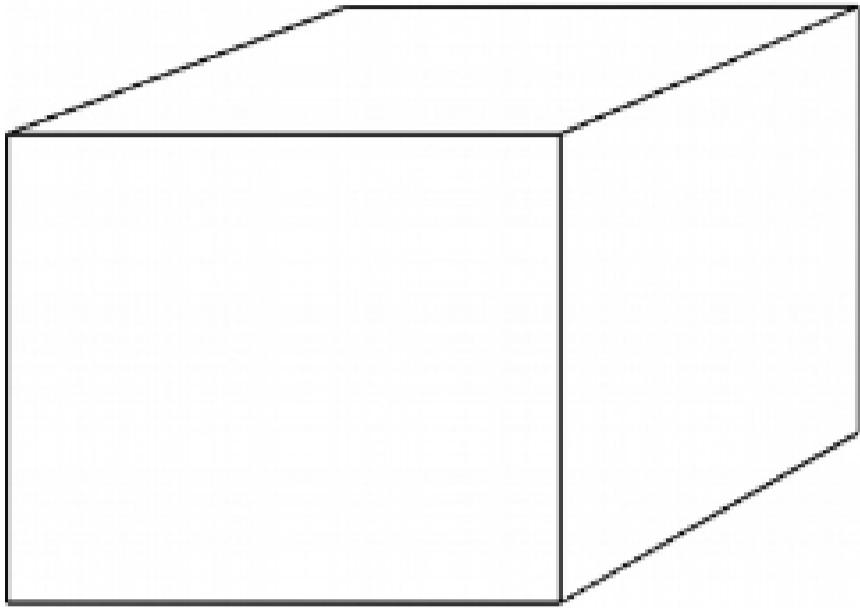
2. An open rectangular box with a square base is to have a volume of 32 m^3 . Find the dimensions that will minimize the surface area of the box.



State and solve the dual of this problem.

An open rectangular box with a square base is to have a surface area of 48 m^2 . Find the dimensions that will maximize the volume of the box.

3. A closed rectangular box with a square base is to have a volume of 64 m^3 . Find the dimensions that will minimize the surface area of the box.



State and solve the dual of this problem.