

Written Homework Problems §4.7

10 problems for 20 points

For *all* of the problems below, finding critical points is not enough to complete the problem. You must demonstrate that you have found a minimum or maximum (whichever one you are looking for..). In addition, you *do* want to make sure you answer the question. (Were you asked for dimensions? area? a point in the xy -plane?)

§4.7 #319, 320, 324, 340, 325, 332*, 339, 343, 348

*For 332, assume a, b and d are all positive numbers. **First**, maximize profit. **Second**, maximize the profit per pizza.

Problem A: You are going to construct an open-topped box with a square base. You need the box to have a volume of $10 m^3$. The material for the base costs $\$5/m^2$ and the material for the sides costs $\$2/m^2$. Find the dimensions of the box that minimize the cost.