Notes.

- Due at the end of class.
- 20 points possible.
- Solutions posted on the website after class.
- Returned on Friday Morning.

**Problem 1.** The box pictured at right has an open top, a square base, and a volume of 72 cubic inches. Complete the tasks listed below. (Your goal is to find its smallest possible surface area.)

1. Label the figure with appropriate variables.
2. Write a formula for the total surface area of all five sides.
3. Reduce your formula to a function of a single variable. (If necessary.)
4. Find the domain of your function.
5. Find all critical numbers for your function.
6. Confirm that you have located a global minimum.
7. Compute the minimum area.