

## Max-Min Worksheet 4

**Problem.** We need to design a cylindrical can with radius  $r$  and height  $h$ . The top and bottom must be made of copper, which will cost 2 cents per square inch. The curved side is to be made of aluminum, which will cost 1 cent per square inch. We seek the dimensions that will maximize the volume of the can. The only constraint is that the total cost of the can is to  $300\pi$  cents.