

Clarification for Homework 6

Math 461, Fall 2006

4.5, #3. Referring to the figures on page 83, here's a description of the identification that goes on in each figure.

1. In Figure 4.4, every point on the segments $\overline{AB} \cup \overline{CD}$ belongs to the same equivalence class (i.e., these two segments are identified to one point).
2. In Figure 4.5, every point on the circumference is identified with its diametrically opposite point. *This is the hardest example of the bunch. Don't spend too much time on it unless you really want to!*
3. In Figure 4.6, two points belong to the same equivalence class if and only if their y -coordinates differ by an integer. *This may not be what the book intended, but it's my best interpretation of the question.*
4. In Figure 4.7, the perimeter of C is identified to one point.

Given this description, draw a picture of the identification space obtained from each figure.