

HW1 Reflection

For the entire homework set, make sure to also include:

- a reflection on the assignment and your solutions. Reflections may include
 - discussion of how routine or challenging the assignment was,
 - approximation of time spent on the assignment or on individual exercises,
 - details about particular difficulties or false starts,
 - explanations of why solutions are incomplete or incorrect, etc.
- a self-assessment (C/R/M) for the entire assignment.

This homework was more challenging for me than the previous one, but it still was not bad. I believe all my solutions are correct, or at least require only minor revisions. For exercise 2, I had to rethink my definition to better reflect the pros and cons of the informal definition we talked about for surfaces. In that informal definition, we were able to effectively encapsulate the geometry of what we wanted, however it only took a little prying to discover that there are shapes which do not fit the definition, which we still may conceive as surfaces. One example is a flat and finite rectangle. Since the rectangle has closed edges, the open ball strategy does not work for defining it as a surface, even though most of us believe it to be one (for example, many people would describe polishing a table as polishing its *surface*). I finally arrived at a definition that has the same nuisances, but which mostly works for our informal sakes. It took me a while to find a way of describing the 5-holed torus as a polygon, but this was mostly because I was intimidated by the seeming complexity of it. As my solution shows, it is actually a relatively simple task. Overall I spent around 4 hours on this homework, including revisions.