

Worksheet 2

Math 634, Algebraic Topology

Friday, October 2, 2020

0. Introduce yourself to your colleague. What are they teaching this quarter?
1. If you haven't done it before, click on "Share Screen" and try out the Zoom whiteboard.
2. Consider a square:



There are 96 ways of labelling two sides with single arrows and two sides with double arrows. The action of $D_4 \times \mathbb{Z}/2 \times \mathbb{Z}/2$, where the first factor is the dihedral group, the second factor switches single arrows and double arrows, and the third factor reverses all the arrows, cuts this down to six orbits, but I only claim that it only gives four distinct surfaces. Work through this systematically.