

Worksheet 15

Math 634, Algebraic Topology

Wednesday, November 11, 2020

In lecture I asserted that the universal cover of an orientable surface of genus $g \geq 2$ is \mathbb{R}^2 .

1. Convince yourself that for every $g \geq 2$, the surface of genus g has a $(g - 1)$ -sheeted cover whose total space is a surface of genus g . So at least they all have the *same* universal cover.
2. If you have time to spare, try to convince yourself that the universal cover is really \mathbb{R}^2 .