

Homework 8

1. Calculate the fundamental group of $S^1 \times S^1$ using the universal covering and theorems on covering paths. (A use of the theorems about the fundamental group of a product and the fundamental group of circle is prohibited.)
2. Calculate the fundamental group of the Möbius strip.
3. List all coverings of the bouquet of two circles with the number of sheets equal 2.
4. Calculate the fundamental group of the letter A .