

# Homework 3

Algebraic Topology 2024-2025

Due 2 April, 2025

## EXERCISE 1

Compute (if necessary, using a drawing) the fundamental groups of the following spaces:

- $X = \{(x, y, z) \in \mathbb{R}^3 \mid z(x^2 + y^2 + z^2 - 1) = 0\}$ ;
- The union of three copies of  $S^2$  each tangent to the other two, as in

