

TOPOLOGY & GROUPS
MICHAELMAS 2016
QUESTION SHEET 0
NOT TO BE HANDED IN

1. Which of the letters A, B, C, E, O, P are homeomorphic?
2. Show that if p is a point on the n -dimensional sphere S^n , then $S^n - \{p\}$ is homeomorphic to \mathbb{R}^n .
3. Show that the quotient space S^1 / \sim , where $x \sim -x$ for all $x \in S^1$, is homeomorphic to S^1 .
4. Show that the boundary of an octagon has a triangulation with three 0-simplices and three 1-simplices. Can you triangulate it using fewer simplices?