

Extra Credit Assignment 9

Due Friday, April 16, 11:59 PM

Choose a positive integer $n \geq 1$; we denote an element of $\mathbb{Z}/n\mathbb{Z}$ by $[a]$, where $a \in \mathbb{Z}$.

Consider the function

$$\mathbb{Z}/n\mathbb{Z} \times S^3 \rightarrow S^3 \quad ([a], (z_1, z_2)) \mapsto (e^{\frac{2\pi ai}{n}} z_1, e^{\frac{2\pi ai}{n}} z_2).$$

(Here, i is a square root of -1 .) Note that I am using the fact that $\mathbb{R}^2 \cong \mathbb{C}^2$, so I am treating an element of S^3 as an element of $\mathbb{C}^2 = \mathbb{C} \times \mathbb{C}$.

Citing theorems from class, compute π_1 of the space obtained by quotient S^3 by this action.