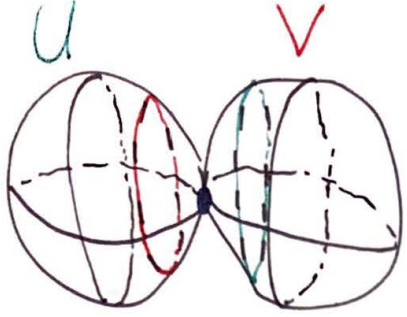
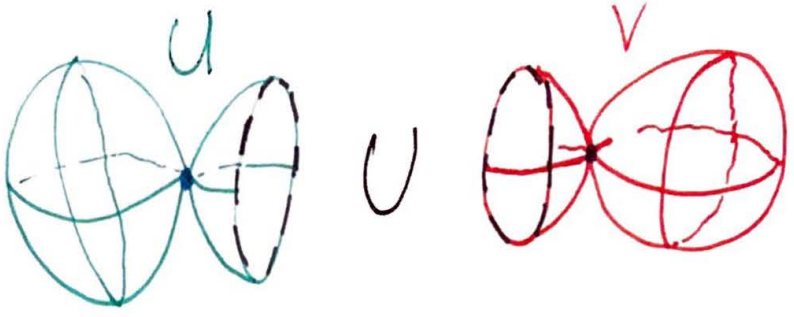
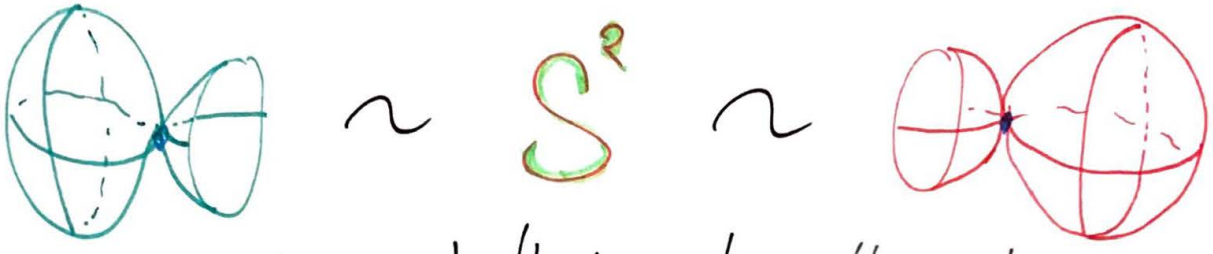
$X =$ 

$=$ 

$\cup$

$U \cap V = \{\cdot\}$ is path connected.

U and V are open in the subspace topology and both contain $\cdot$ and are path connected.



because the part that's not on the spheres is contractible.

So by Seifert-Van Kampen Theorem

$$\pi_1(X) \cong \frac{\pi_1(U) * \pi_1(V)}{\pi_1(\{\cdot\})} \cong \frac{\pi_1(S^1) * \pi_1(S^2)}{0}$$

$$\cong \frac{0 * 0}{0} \cong 0$$