

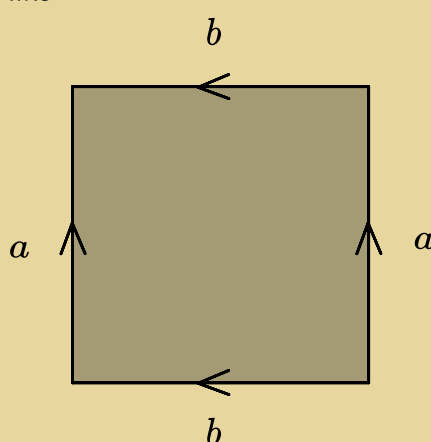
 Info

This note, that [was found here](#), as a part of [a collection](#) is written (completely with human hands) by [Rupadarshi Ray](#), was created on January 17, 2024 3:59:14 PM, was last modified on September 7, 2026 2:01:33 PM, and was exported on September 7, 2026 3:04:04 PM.

Deformation retract of a punctured torus to wedge sum of two circles

From the identification

 $[0, 1]^2$ with the glued sides like



is diffeomorphic to T^2

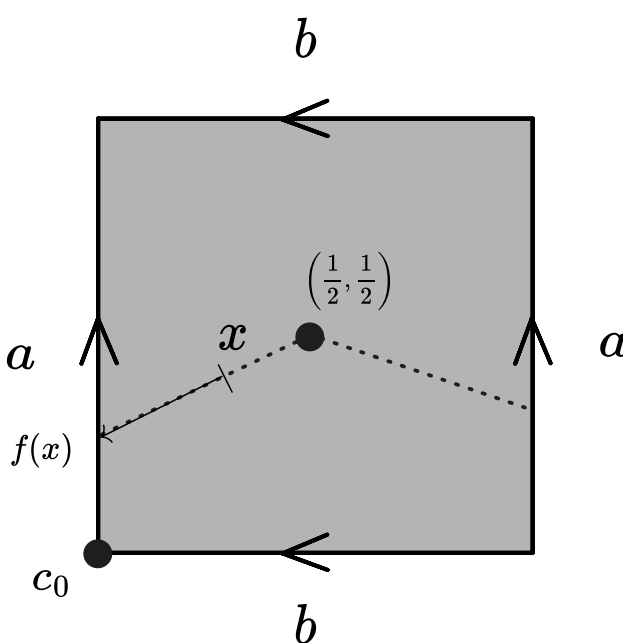
$$[0, 1]^2 \rightarrow S^1 \times S^1$$

$$(x, y) \mapsto ((\cos x, \sin x), (\cos y, \sin y))$$

or in complex notation

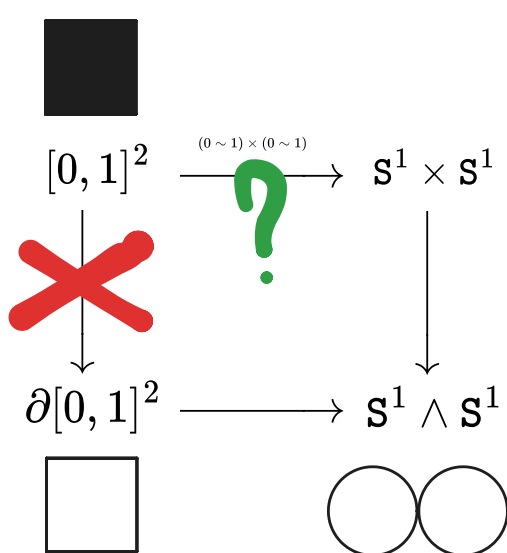
$$(x, y) \mapsto (e^{ix}, e^{iy})$$

we take the removed point to be $(\frac{1}{2}, \frac{1}{2})$ and the deformation to be the map



The diagram

$$[0, 1] \xrightarrow{0 \sim 1} \mathbf{S}^1$$



commutes.

Current note has 0 direct children and 0 total descendants.

- stretchy
 - $T_{1,1,0}^2$
 - Deformation retract of a punctured torus to wedge sum of two circles

And it has 1 siblings.

- stretchy
 - $T_{1,1,0}^2$
 - Deformation retract of a punctured torus to wedge sum of two circles