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Punctured plane $\mathbb{R}^2 \setminus \{0\}$

#wiki/Man/R/2

- fundamental group is $(\mathbb{Z}, +)$
- covering:: [Infinite-sheeted helicoid-like surface](#)
- homology
- forms
 - [de Rham cohomology of the punctured plane](#)
 - [Angle form on \$\mathbb{R}^2 \setminus \{0\}\$](#)
- Lie group structure given by $S^1 \times (0, 1)$

Current note has 2 direct children and 2 total descendants.

- [stretchy](#)
 - $\mathbb{R}^2 \setminus \{0\}$
 - [Angle form on \$\mathbb{R}^2 \setminus \{0\}\$](#)
 - [de Rham cohomology of the punctured plane](#)

And it has 62 siblings.

- [stretchy](#)
 - [Trefoil \$3_1\$ knot](#)
 - [The only compact connected Lie group that can act faithfully on a torus is itself](#)
 - [Hecke algebras](#)
 - $\overline{B^n}$
 - $\text{BS}(1, 2)$
 - $(\mathbb{C}, +, \times)$
 - $D^* := D \setminus \{0\}$
 - [Cantor set](#)
 - [Configuration space of \$N\$ rigid points in \$\mathbb{R}^3\$](#)
 - [Free groups](#)
 - $GL(2)(\mathbb{Z}) \curvearrowright T^2$
 - H_2^3
 - $[a, b]$
 - [Figure 8 knot](#)
 - [Lamplighter group on \$\mathbb{Z}_2\$](#)
 - $\beta\mathbb{N}$
 - $\#_2\mathbb{R}P^2$
 - $\prod_{i \in \mathbb{N}} \{1, \dots, n_i\}$
 - $\mathbb{R}P^n$
 - $(\mathbb{Q}, +, \times, <)$
 - $\mathbb{Q}_{\hat{p}}$
 - $\overline{\mathbb{Q}}$
 - $\mathbb{Q}_{\text{constr}}$
 - $\mathbb{Q}(\xi_n)$
 - $\mathcal{O}_{\overline{\mathbb{Q}}}$
 - $(\mathbb{R}, +, \times, <, \sup)$
 - [Homeomorphism of \$\mathbb{R}^2\$ that sends \$\mathbb{N}\$ to a countable closed discrete subset](#)
 - $\mathbb{R}^2 \times S^1$
 - $\mathbb{R}^n$
 - $\mathbb{R} \times S^1$
 - $\mathbb{R} \times S^2$
 - S^1
 - $S^1 \wedge S^1$
 - $S^1 \times S^n$
 - [S² and \$\mathbb{C}P^1\$](#)
 - [Mapping torus of the antipodal map of \$S^2\$](#)
 - S^3
 - S^n
 - [I-bundle](#)
 - [Symmetric group](#)
 - $\mathbb{I}$
 - T^2
 - T_g^2
 - $T_{0,0,3}^2$
 - $\mathbb{R}^2 \setminus \{0\}$
 - [Three \$T_{1,0,1}^2\$ -glued at their boundaries](#)
 - $T_{1,1,0}^2$
 - T_2^2
 - $T_g^2 \times [0, 1]$
 - $\#_{\mathbb{N}}T^2$
 - [Thompson's group](#)
 - T^n

- 3-valent tree
- 4-valent tree
- $[0, 1]^{\mathbb{N}}$ with product topology.
- Whitehead manifolds
- $\mathbb{Z}$
- $\mathbb{Z}[\sqrt{m}]$
- $\mathbb{Z}[X]$
- $\mathbb{Z}^{\mathbb{N}}$
- $\mathbb{Z}[i]$
- $\mathbb{Z}[i\sqrt{5}]$