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2-generated subgroups of $PSL(2)(\mathbb{R})$

$$\text{Rep}(F_2, PSL(2)(\mathbb{R})) \cong \mathbb{R}^3?$$

Let $a, b \in PSL(2)(\mathbb{R})$ be two hyperbolic elements or two parabolic elements. Then for large enough $k \geq 1$ we have

$$\langle a, b \rangle \cong F_2$$

[1]

Consider

$$\begin{aligned} PSL(2)(\mathbb{R}) \times PSL(2)(\mathbb{R}) &\rightarrow \mathbf{FinGenGrp}_{\cong} \\ (a, b) &\mapsto \langle a, b \rangle \end{aligned}$$

and the squaring map

$$\begin{aligned} PSL(2)(\mathbb{R}) \times PSL(2)(\mathbb{R}) &\rightarrow PSL(2)(\mathbb{R}) \times PSL(2)(\mathbb{R}) \\ (a, b) &\rightarrow (a^2, b^2) \end{aligned}$$

Current note has 0 direct children and 0 total descendants.

- [stem](#)
 - [Objects stemming from \$PSL\(2\)\(\mathbb{R}\)\$](#)
 - [2-generated subgroups of \$PSL\(2\)\(\mathbb{R}\)\$](#)

And it has 3 siblings.

- [stem](#)
 - [Objects stemming from \$PSL\(2\)\(\mathbb{R}\)\$](#)
 - [HomGrp\(\$F_2, PSL\(2\)\(\mathbb{R}\)\$ \)](#)
 - [2-generated subgroups of \$PSL\(2\)\(\mathbb{R}\)\$](#)
 - [Fuchsian groups \$\Gamma <_{\mathfrak{d}} PSL\(2\)\(\mathbb{R}\) \leftrightarrow\$ oriented hyperbolic 2-manifold/orbifolds \$\rightarrow\$ Riemann surfaces with branching signature](#)