

This note, that [was found here](#), as a part of [a collection](#) is written (completely with human hands) by [Rupadarshi Ray](#), was created on May 21, 2025 2:59:17 PM, was last modified on September 1, 2026 11:43:38 PM, and was exported on September 7, 2026 2:50:38 PM.

SL

| SL | $\mathbb{Z}$ | $\mathbb{Q}$ | $\mathbb{R}$        | $\mathbb{C}$        |
|----|--------------|--------------|---------------------|---------------------|
| 1  |              |              |                     |                     |
| 2  |              |              | $SL(2)(\mathbb{R})$ | $SL(2)(\mathbb{C})$ |
| 3  |              |              |                     |                     |
| 4  |              |              |                     |                     |

| PSL | $\mathbb{Z}$ | $\mathbb{Q}$ | $\mathbb{R}$ | $\mathbb{C}$ |
|-----|--------------|--------------|--------------|--------------|
| 1   |              |              |              |              |
| 2   |              |              |              |              |
| 3   |              |              |              |              |
| 4   |              |              |              |              |

Current note has 15 direct children and 18 total descendants.

- [squishy](#)
  - SL
    - $\underline{SL}(2)$ .
    - $SL(2)(\mathbb{C})$ 
      - $\mathfrak{sl}(2, \mathbb{C})$
      - $PSL(2)(\mathbb{C})$
      - [rep](#)
        - $SL_{\mathbb{C}}(2) \curvearrowright \mathbb{C}(x, y)$
    - $PSL(n, \mathbb{C})$
    - $SL(2)(\mathbb{R})$
    - $SL(2)(\mathbb{R}) / SL(2)(\mathbb{Z})$
    - $H_q$
    - $PSL(2)(\mathbb{Z})[2]$
    - $[PSL(2)(\mathbb{Z})[2], PSL(2)(\mathbb{Z})[2\$]]$
    - $PSL(2)(\mathbb{Z})[N]$
    - $SL(3, \mathbb{R})$
    - $SL(2)(\mathbb{Z})$
    - $PSL(2)(\mathbb{Z})$
    - [Congruent subgroups of  \$PSL\(2\)\(\mathbb{Z}\)\$](#)
    - $SL(n, \mathbb{Z})$
    - $SL(2)(\mathbb{Z}_2)$

And it has 30 siblings.

- [squishy](#)
  - $SL(2)(\mathbb{R}) \curvearrowright \mathbb{R}^2$
  - $SL(2)(\mathbb{R}) \curvearrowright H^2_{\mathbb{U}}$
  - $\text{Mat}_{\mathbb{C}}(2)$
  - $A_{r, \cdot - \langle z \mapsto \lambda z \rangle} \backslash \mathbb{R}H^2_{\mathbb{U}}$
  - $\mathbb{C} \setminus \{0\}, \cdot - \langle z \mapsto z + 1 \rangle \backslash \mathbb{R}H^2_{\mathbb{U}}$
  - $\mathbb{C} \setminus \{0, 1\}, \cdot - PSL(2)(\mathbb{Z})[2] \backslash \mathbb{R}H^2_{\mathbb{U}}$
  - $\mathbb{R} \ltimes_{\theta} \mathbb{C}^2$
  - $\boldsymbol{CI}(\mathbb{R}^n, \langle \cdot, \cdot \rangle_{0, n})$
  - $\mathbb{C}^n$
  - $U(\mathbb{C} \setminus \{0\})$
  - $PSL(2)(\mathbb{C}) \curvearrowright \mathbb{C}P^1 \cong_{\text{Man}} S^2$
  - $\mathbb{C}P^n$
  - [Farey\\_graph\\_complex and tree](#)
  - GL
  - [Heisenberg.group](#)
  - [Incomplete hyperbolic polygon mod side-pairing](#)
  - $\mathbb{R}H^2, \cdot - \mathbb{R}H^2_{\mathbb{U}}, \cdot - D^2$
  - $\mathbb{R}H^n$
  - [D\\_n\\_lattice](#)
  - [Matrices](#)
  - $\text{Mat}_{\mathbb{R}}(2)$
  - [Mobius endomorphisms](#)
  - [Elementary\\_group with finite and infinite sided Dirichlet polyhedra](#)
  - [Polynomials](#)
  - $T^*S^1 \not\cong_{\text{Sym}} (\mathbb{R}^2 \setminus \{0\}, dx \wedge dy)$
  - $Z\left(\sum_{1 \leq j \leq n} z_j^2 - 1\right)(\mathbb{C}) \cong_{\text{Sym}} T^*S^{n-1}$
  - SL
  - SO
  - [Seifert–Weber dodecahedral 3-manifold](#)

