

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 8, 2026 4:40:00 PM, was last modified on September 7, 2026 1:11:10 PM, and was exported on September 7, 2026 2:50:36 PM.

$\mathbb{R}H^2, \mathbb{R}H^2_U, D^2$

#wiki/Man/C/1

- the action $SL(2)(\mathbb{R}) \curvearrowright H^2_U$
- Holomorphic/meromorphic functions
 - [Modular forms](#)
- hyperbolic metric
 - geodesic lines
 - two point
 - v1 <https://www.desmos.com/calculator/b2icgnv3bd>
 - v2 <https://www.desmos.com/calculator/inhmep3fgx>
 - point and tangent
 - v1 <https://www.desmos.com/calculator/lhiac9nlou>
 - v2 <https://www.desmos.com/calculator/qitjagpait>
 - point on interior and boundary <https://www.desmos.com/calculator/ec92cc9cjt>
 - geodesics in unit tangent bundle
 - <https://www.desmos.com/3d/ppdksggjgn>

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[Metric balls in the hyperbolic disk](#)

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[Perpendicular bisectors in the hyperbolic disk](#)

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Current note has 2 direct children and 4 total descendants.

- [squishy](#)
 - $\mathbb{R}H^2, \mathbb{R}H^2_U, D^2$
 - [Polygons in hyperbolic plane](#)
 - [Triangles in hyperbolic plane](#)
 - [Hexagons in hyperbolic plane](#)
 - [Side pairings](#)

And it has 30 siblings.

- [squishy](#)
 - $SL(2)(\mathbb{R}) \curvearrowright \mathbb{R}^2$
 - $SL(2)(\mathbb{R}) \curvearrowright H^2_U$
 - $\text{Mat}_{\mathbb{C}}(2)$
 - $A_r, \langle z \mapsto \lambda z \rangle \backslash \mathbb{R}H^2_U$
 - $\mathbb{C} \setminus \{0\}, \langle z \mapsto z+1 \rangle \backslash \mathbb{R}H^2_U$
 - $\mathbb{C} \setminus \{0,1\}, \text{-}PSL(2)(\mathbb{Z})[2] \backslash \mathbb{R}H^2_U$
 - $\mathbb{R} \ltimes_{\theta} \mathbb{C}^2$
 - $\boldsymbol{CI}(\mathbb{R}^n, \langle \ , \ \rangle_{0,n})$
 - $\mathbb{C}^n$
 - $U(\mathbb{C} \setminus \{0\})$
 - $PSL(2)(\mathbb{C}) \curvearrowright \mathbb{C}P^1 \cong_{\text{Man}} S^2$
 - $\mathbb{C}P^n$
 - [Farey graph, complex and tree](#)
 - GL
 - [Heisenberg group](#)
 - [Incomplete hyperbolic polygon mod side-pairing](#)
 - $\mathbb{R}H^2, \mathbb{R}H^2_U, D^2$
 - $\mathbb{R}H^n$
 - [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](#)
 - $U(n, \mathbb{C})$