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Conformal radius of pointed simply connected open subsets of $\mathbb{C}$

Definition. Conformal radius of pointed simply connected open subsets of $\mathbb{C}$

Consider a simply connected open subset $\Omega \subseteq \mathbb{C}$ and some $a \in \Omega$. The unique map in

(Riemann mapping theorem) Let $\Omega \subset \mathbb{C}$ be a simply connected open, proper subset of $\mathbb{C}$. Then there exists a biholomorphism from Ω onto the unit disk

$$f : \Omega \rightarrow D$$

Moreover, given $a \in \Omega$ there is a **unique** biholomorphism

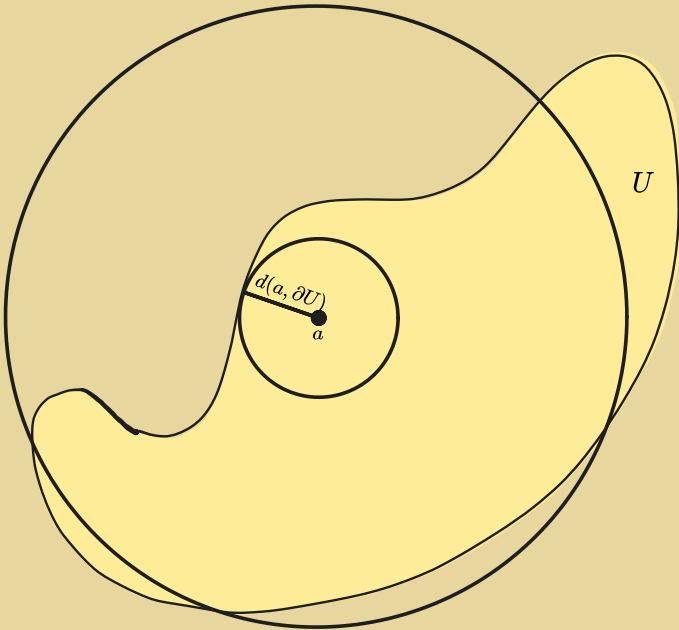
$$f : \Omega \rightarrow D \\ f(a) = 0, f'(a) > 0$$

has a $f'(a) \in (0, \infty)$. The **conformal radius** of (Ω, a) is

$$\text{rad}_a(\Omega) := \frac{1}{f'(a)}$$

Conformal radius

$$d(z, \partial\Omega) \leq \text{rad}_a(\Omega) \leq 4d(z, \partial\Omega)$$



Current note has 0 direct children and 0 total descendants.

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And it has 13 siblings.

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