

Re: Continuous bijection (not necessarily homeo)

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Hi! My problem is:

Show that there is no continuous bijection from $\{z \text{ in } \mathbb{C} \mid |z| < 2\}$
to $\{z \text{ in } \mathbb{C} \mid |z| < 2 \text{ and } z \text{ is not in } [-1,1]\}$.

(here the real interval $[-1,1]$ is considered as a subset of \mathbb{C})

TIA

At first glance, if such a map, say f , does exist, then there is a function $\delta: (0,2) \rightarrow (0, +\infty)$ s.t. $\text{dist}(f(z), [-1,1]) < \delta(\epsilon)$, then $|z| > 2 - \epsilon$. Maybe this helps.

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