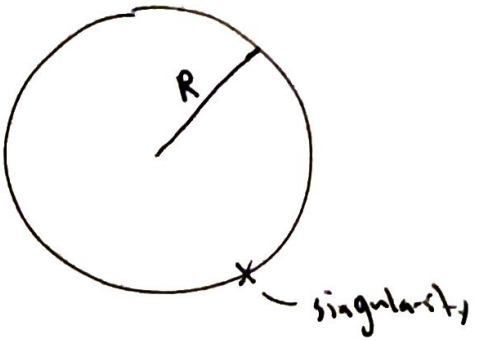
Week 7 #

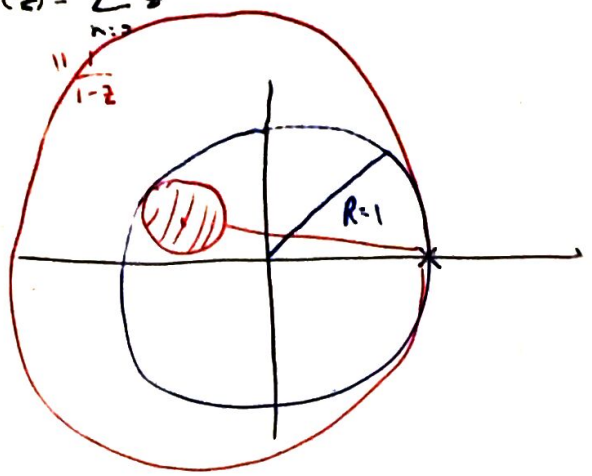
analytic continuation

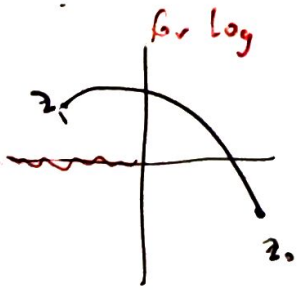
$$f(z) = \sum_{n=0}^{\infty} a_n (z - z_0)^n$$



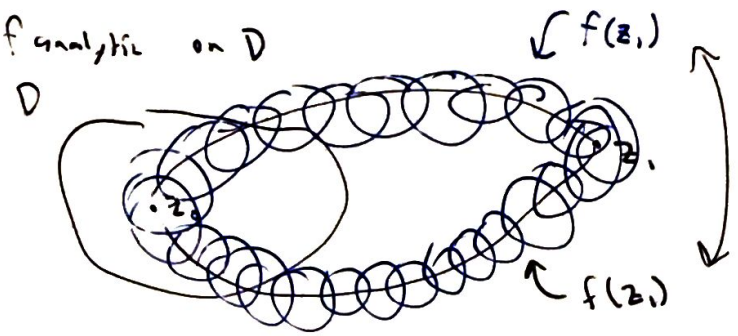
ex: $f(z) = \sum_{n=0}^{\infty} z^n$

$= \frac{1}{1-z}$





f analytic on D



are these equal from the two continuations

Monodromy

Let A be a simply connected domain (no holes)

Let f be analytic at $z_0 \in A$

If f can be analytically continued along any arc within A connecting z_0 to $z \in A$ then the continuation is single-valued