

# Complex Analysis

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*Idea 1.* Proving non-analyticity. Show different limit in two diff. directions. Often useful to consider  $h \in \mathbb{R}$  and  $h \in i\mathbb{R}$ .

**Prop 1.** *Often convenient to regard holomorphic definition as*

$$f(z_0 + h) = f(z_0) + ah + o(h)$$

*for some  $a$ .*