

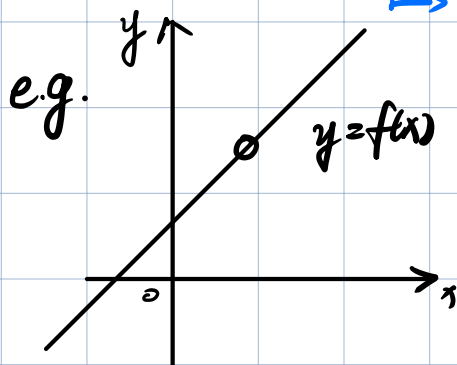
The idea of limit

1. A limit may or may not exist.

1) $\lim_{x \rightarrow a} f(x)$ exists: the limit is a single number

① $\lim_{x \rightarrow a} f(x) = L$, roughly means that 'if x is close to a (but $x \neq a$), then $f(x)$ is close to L '.

\hookrightarrow one number.



2) DNE (does not exist)

① ∞

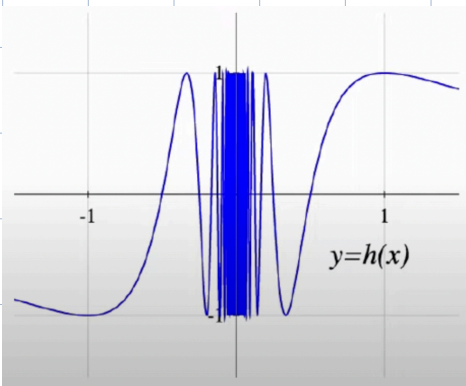
② $-\infty$

③ different side limits

$$\lim_{x \rightarrow a^+} f(x) \neq \lim_{x \rightarrow a^-} f(x)$$

④ sth. else.

e.g.



oscillating between 0 & 1.

这只是表明当 x 趋于无穷或某一特定值时 $f(x)$ 趋向于无穷大。而极限存在必定为某一特定值 A 。

