§ 2.4 - The Precise Def^n of a Limit

In this video, we will:

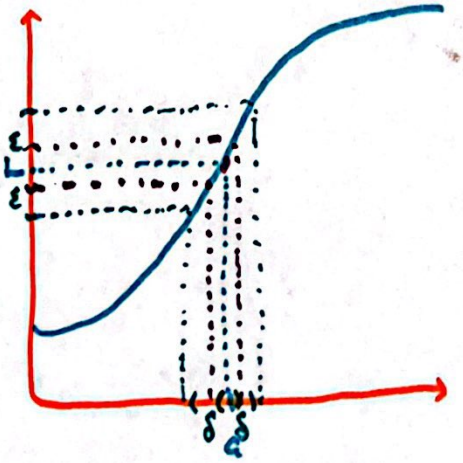
- State the precise def^n of a limit
- Try to understand what it means

Let f be a function defined on some open interval containing a, except possibly for a itself. Then the limit of $f(x)$ as x approaches a is L, or

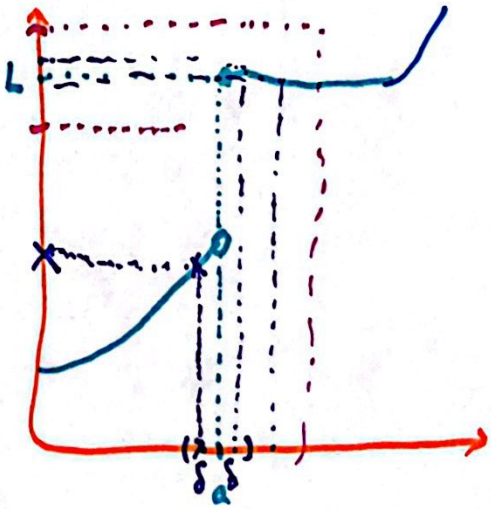
$$\lim_{x \to a} f(x) = L$$

if, for every number $\varepsilon > 0$ there is a number $\delta > 0$ such that if $0 < |x-a| < \delta$, then $|f(x)-L| < \varepsilon$

WLOG



Limit exists at $x=a$



Limit DNE at $x=a$