

The Illustrated Limit

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

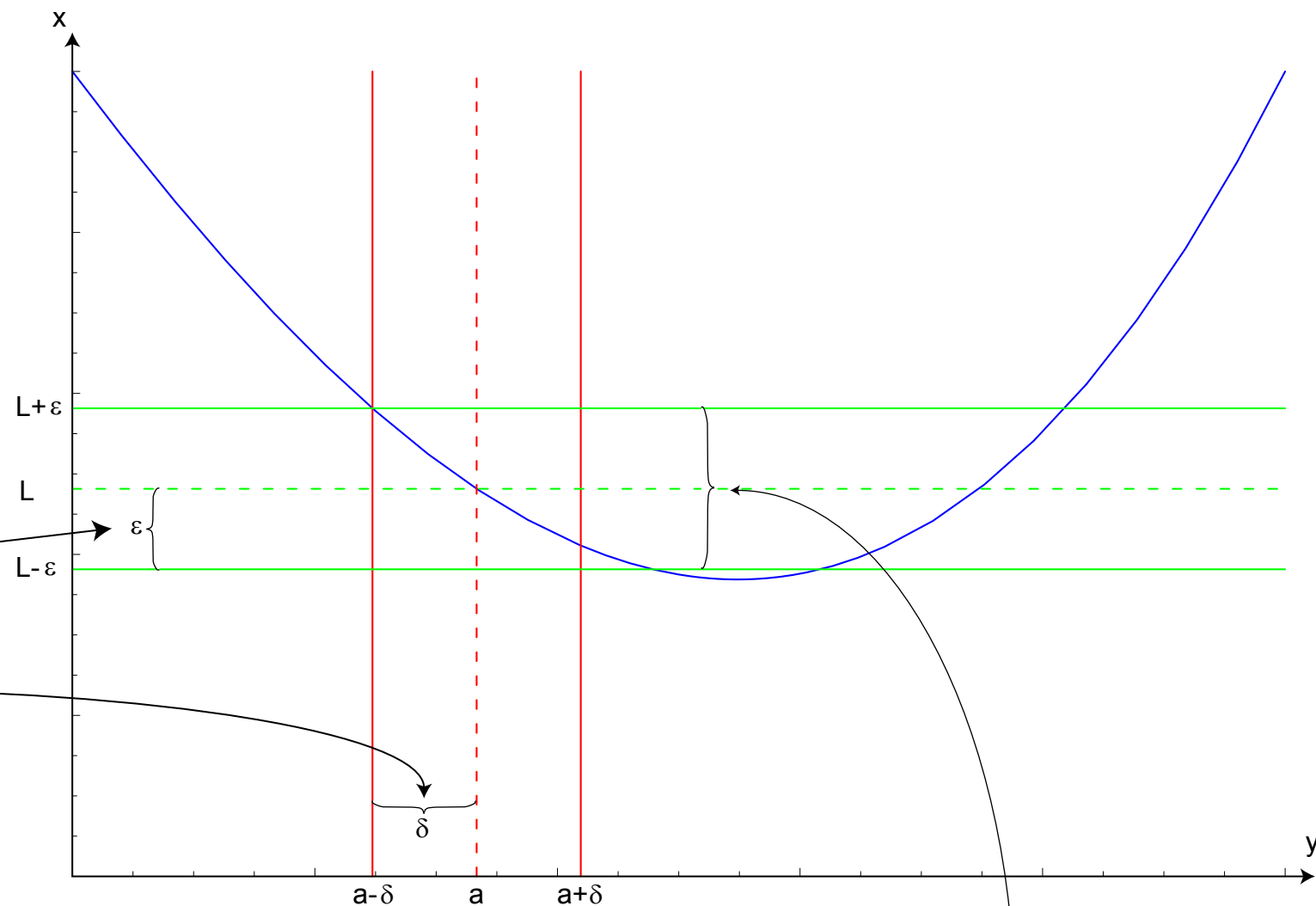
if and only if
for all $\varepsilon > 0$

(vertical intervals)

there exists a $\delta > 0$

(horizontal interval)

such that



$$|x - a| < \delta$$

(x in the horizontal interval)

implies

$$|f(x) - L| < \varepsilon.$$

(y in the vertical interval)