## Formal Definition of Limit

Suppose $f$ is defined on an open interval containing $c$, except possibly at $c$. The limit of $f$ at $c$ is $L$ if, for any positive number $\epsilon$, there exists a number $\delta$, such that

$$
|f(x)-L|<\epsilon \quad \text { whenever } \quad 0<|x-c|<\delta .
$$

