Limit of a function

Let (X, d_1) and (Y, d_2) be two metric spaces.

Let $E \subseteq X$ and c be limit point of E

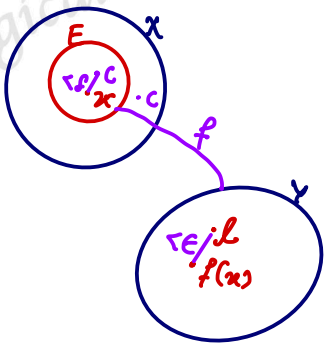
Let $f: E \to Y$ be a function.

$$\lim_{x \to c} f(x) = l \qquad [l \in Y]$$

if for given $\epsilon > 0$ $\exists\ \delta > 0$

s.t. $d_2(f(x), l) < \epsilon$

When $d_1(x, c) < \delta$ $\boxed{x \in E}$



$E \cap ((c-\delta, c+\delta) - \{c\}) \neq \phi.$