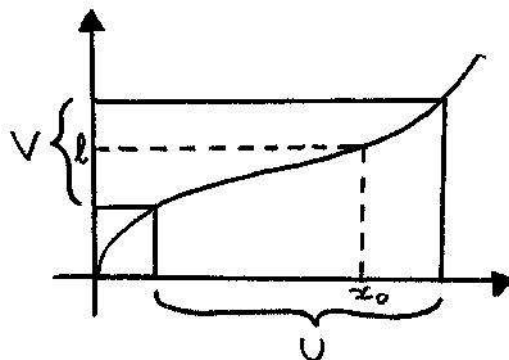


# I LIMITI

## (DEFINIZIONE TOPOLOGICA)

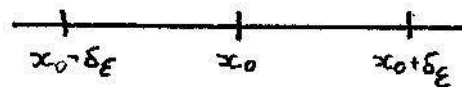
$$\lim_{x \rightarrow x_0} f(x) = l$$

$\forall$  intorno  $V$  di  $l$  esiste un opportuno intorno  $U$  di  $x_0$  tale che  $f(x) \in V$  se  $x \in U$  con  $x \neq x_0$



$$\forall \epsilon > 0 \quad \exists \delta_\epsilon > 0 : \forall x \quad 0 < |x - x_0| < \delta_\epsilon \Rightarrow |f(x) - l| < \epsilon$$

$$|x - x_0| > 0 \quad |x - x_0| < \delta_\epsilon \quad (x_0 - \delta_\epsilon < x < x_0 + \delta_\epsilon)$$



$$|f(x) - l| < \epsilon \quad l - \epsilon < f(x) < l + \epsilon$$

oppure:

$$\lim_{x \rightarrow x_0} f(x) = +\infty$$

se  $\forall$  intorno  $V$  di  $+\infty$   $\exists$  un opportuno intorno  $U$  di  $x_0$  :

$$f(x) \in V \Rightarrow x \in U \text{ con } x \neq x_0$$

$$\forall M > 0 \quad \exists \delta_M > 0 : f(x) > M$$

$$\forall x \quad 0 < |x - x_0| < \delta_M$$

