Question about Existence of limit of a function…?

Q:

$If\ f: R \to R\ be\ defined\ by\ f(x) = \begin{cases} 1 & if\ x > 0 \\ -1 & if\ x < 0 \end{cases}$

$then\ prove\ with\ \varepsilon - \delta\ definition, that\ \lim_{x \to 0} f(x)$

$does\ not\ exist..?$

Note: Please explain me with step by step…!

Thanks too much for this….!