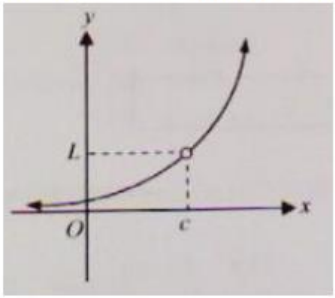
Types of Discontinuities

Removable Discontinuities (Holes)

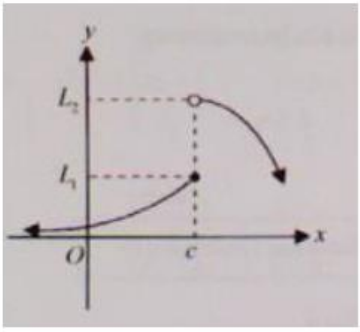


I. $\lim_{x \to c} f(x) = L$ (the limit exists)

II. $f(c)$ is undefined

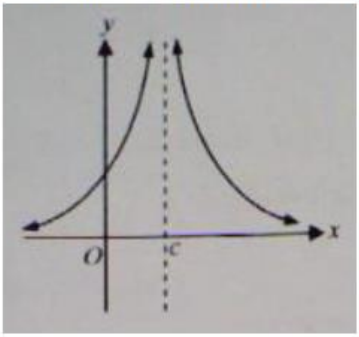
Non-Removable Discontinuities (Jumps and Asymptotes)

A. Jumps



$\lim_{x \to c} f(x) = DNE$ because $\lim_{x \to c^-} f(x) \neq \lim_{x \to c^+} f(x)$

B. Asymptotes (Infinite Discontinuities)



$\lim_{x \to c} f(x) = \pm\infty$