

lim f_{x-\mu} = \omega
x \to \mu^+

lim f_{x-\mu} = \omega
x \to \mu

(۱) (۵)

lim f[x]-\mu = \omega
x \to \mu^+

lim f[x]-\mu = 1
x \to \mu^-

(۲) (۵)

lim [f_{x-\mu}] = \omega
x \to \mu^+

lim [f_{x-\mu}] = f
x \to \mu

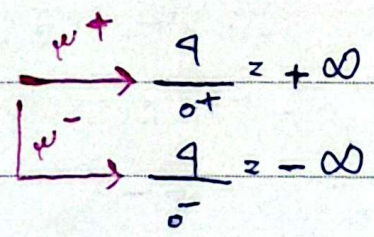
(۳) (۵)

[lim f_{x-\mu}] = \omega
x \to \mu^+

[lim f_{x-\mu}] = \omega
x \to \mu^-

(۴) (۵)

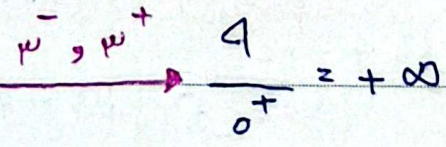
الف) lim f_{x-\mu} / x-\mu



در نوار

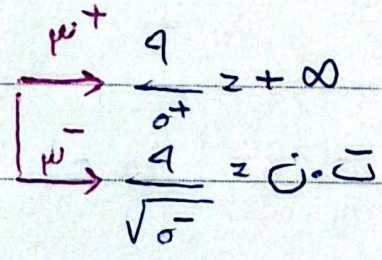
(۵)

ب) lim f_{x-\mu} / (x-\mu)^p



در نوار

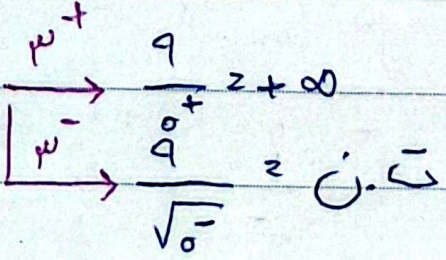
الف) lim f_{x-\mu} / \sqrt{x-\mu}



در نوار

(۴)

ب) lim f_{x-\mu} / \sqrt{(x-1)(x-\mu)}



1 \mu
+ | - | +

در نوار

$$\lim_{x \rightarrow 0} \frac{x-3}{x(x-3)(x-1)}$$

$\begin{matrix} \nearrow 0^- & \frac{0}{0^-} & z = -\infty \\ \searrow 0^+ & \frac{0}{0^+} & z = +\infty \end{matrix}$

حد ندارد (۷)

$$\lim_{x \rightarrow 0} \frac{x-3}{[x-3]}$$

$\begin{matrix} \nearrow 0^- & \frac{0}{0^-} & z = 0 \cdot \infty \\ \searrow 0^+ & \frac{0}{0^+} & z = -0 \end{matrix}$

حد ندارد (۵)

$$\text{الف) } \lim_{x \rightarrow 3} [3x] + [-2x]$$

$\begin{matrix} \nearrow 3^+ & 9-6 & z = 3 \\ \searrow 3^- & 9-6 & z = 3 \end{matrix}$

حد دارد (۱)

$$\text{ب) } \lim_{x \rightarrow -4} [-4x] + [2x]$$

$\begin{matrix} \nearrow -4^+ & 16-8 & z = 8 \\ \searrow -4^- & 16-8 & z = 8 \end{matrix}$

حد دارد (۵)

$$\lim_{x \rightarrow 2} [(x-2)^2 - 4]$$

$\begin{matrix} \nearrow 2^+ & [0^+] - 4 & z = -4 \\ \searrow 2^- & [0^-] - 4 & z = -4 \end{matrix}$

حد دارد (۹)

$$\lim_{x \rightarrow 3} [-(x-3)^2] + 9$$

$\begin{matrix} \nearrow 3^+ & [0^-] + 9 & z = 9 \\ \searrow 3^- & [0^+] + 9 & z = 9 \end{matrix}$

حد دارد (۵)

$$\lim_{x \rightarrow 2} \frac{|x-2|}{(x-2)(x-1)}$$

$\begin{matrix} \nearrow 2^+ & \frac{(x-2)}{(x-2)(x-1)} & z = \frac{1}{1} & z = 1 \\ \searrow 2^- & \frac{-(x-2)}{(x-2)(x-1)} & z = \frac{-1}{1} & z = -1 \end{matrix}$

حد ندارد (۵)

$$\lim_{x \rightarrow 1} \frac{x - [x]}{x^2 - 1}$$

$\begin{matrix} \nearrow 1^+ & \frac{(x-1)}{(x-1)(x+1)} & z = \frac{1}{x+1} & z = \frac{1}{2} \\ \searrow 1^- & \frac{1}{(x-1)(x+1)} & z = \frac{1}{0^-} & z = -\infty \end{matrix}$

حد ندارد

Arman