

$$b) \lim_{x \rightarrow 4} \frac{\epsilon x - 4}{[x - 4]}$$

$$\frac{\epsilon x - 4}{-1} \rightarrow +\infty \quad \frac{9}{-1} = -9$$

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حساب داری

~~v) $\lim_{x \rightarrow 4} \frac{\sqrt{x} - 2}{x - 4}$~~

~~$\frac{\sqrt{x} - 2}{x - 4} = \frac{\sqrt{x} - 2}{(\sqrt{x} - 2)(\sqrt{x} + 2)}$~~

~~$\lim_{x \rightarrow 4} \frac{1}{\sqrt{x} + 2} = \frac{1}{\sqrt{4} + 2} = \frac{1}{4}$~~

v) $\lim_{x \rightarrow 4} \frac{\epsilon x - 4}{\sqrt{x^2 - 4x + 4}}$

صورت $9 \rightarrow 9$
مخرج $0 \rightarrow 0$

حاصل ضرب ندارد $5 >$

$\sqrt{(x - 2)^2} = |x - 2|$

a) $\lim_{x \rightarrow 4} [\sqrt{x}] + [-1/x]$

b) $\lim_{x \rightarrow -4} [-\epsilon x] + [1/x]$

$\sqrt{4} = 2 \rightarrow [2] = 2$

$-1/4 = -0.25 \rightarrow [-0.25] = -0.25$

$2 + (-0.25) = 1.75$

$-\epsilon x = 4 \rightarrow [4] = 4$

$1/x = 1/4 \rightarrow [0.25] = 0.25$

$4 + 0.25 = 4.25$

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d) $\lim_{x \rightarrow 2} \frac{e^x - 2}{x - 2}$

$x \rightarrow 2 \downarrow$
 0

$f(2) = 2.57$

$+\infty \rightarrow$
 $-\infty \rightarrow$

در صورت وجود ندارد

b) $\lim_{x \rightarrow 2} \frac{e^x - 2}{(x - 2)^+}$

$+\infty$

$+\infty$

g) $\lim_{x \rightarrow 2} \frac{e^x - 2}{\sqrt{x - 2}}$

$x \rightarrow 2 \rightarrow 0^+$

$+\infty$

b) $\lim_{x \rightarrow 2} \frac{e^x - 2}{\sqrt{x - 2}}$

$x \rightarrow 2^+$

$+\infty$

9)

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

$$x = 2 + \delta \Rightarrow \frac{\epsilon}{2} < \delta < 2 + \epsilon$$

$$[\epsilon^2] < \delta < \epsilon$$

ب) $\lim_{x \rightarrow 3} [4x - x^2]$

$$x = 3 + \delta \Rightarrow 1.9 < \delta < 4$$

$$[4x - x^2] < \delta < 4$$

ج) $\lim_{x \rightarrow 2} \frac{|x-2|}{x^2 - 4x + 4}$

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

حد وجود ندارد

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

$$[x] = 0 \Rightarrow \frac{x}{x^2 - 1} \Rightarrow \frac{x}{(x-1)(x+1)}$$

حد وجود ندارد

1) $\lim (fx - \mu)$

$f(x) - \mu \in \Delta - \mu \in \Delta$

2) $\lim (fx - \mu)$

$f(x) - \mu \in \Delta$

3) $\lim_{x \rightarrow \mu^+} [x] - \mu$

$[x] \in \Delta \quad f(x) - \mu \in \Delta - \mu \in \Delta$

4) $\lim_{x \rightarrow \mu} [x] - \mu$

$f(1) - \mu \in \Delta - \mu \in \Delta$

5) $\lim_{x \rightarrow \mu^+} [fx - \mu]$

$x \rightarrow \mu^+$

$\epsilon x - \mu \in (\mu, \mu + \epsilon) \Rightarrow \mu \in \Delta, \mu \in \Delta, \epsilon \rightarrow [\mu, \mu + \epsilon] \in \Delta$

6) $\lim_{x \rightarrow \mu} [fx - \mu]$

$\epsilon x - \mu \in (\mu, \mu + \epsilon) \Rightarrow \mu \in \Delta, \mu \in \Delta, \epsilon \rightarrow [\mu, \mu + \epsilon] \in \Delta$

7) $\lim_{x \rightarrow \mu} [fx - \mu]$

$x \rightarrow \mu^+$

$[\mu] \in \Delta$

8) $\lim_{x \rightarrow \mu} [fx - \mu]$

$x \rightarrow \mu^+$

$[\mu] \in \Delta$