① $\lim_{x \to 2^+} \varepsilon x - 3 = 0$ ، $\lim_{x \to 2^-} \varepsilon x - 3 = 1$

② $\lim_{x \to 2^+} 4[x] - 3 = 5$ ، $\lim_{x \to 2^-} [x] - 3 = 1$

③ $\lim_{x \to 2^+} [\varepsilon x - 3] = [3, \varepsilon] = 3$

$\lim_{x \to 2^-} [\varepsilon x - 3] = (2, \varepsilon) = 2$

④ $\left[\lim_{x \to 2^+} \varepsilon x - 3\right] = [0,1] = 0$ ، $\left[\lim_{x \to 2^-} \varepsilon x - 3\right] = 1$

⑤ $\lim_{x \to 3} \frac{\varepsilon x - 3}{x - 3}$ $\begin{cases} \to +\infty \\ \to -\infty \end{cases}$ (وجود ندارد)

$\lim_{x \to 3} \frac{4x - 3}{(x-3)^2}$ $\begin{cases} \to +\infty \\ \to +\infty \end{cases}$ (وجود ندارد)

Galaxy S23 FE

ه) $\lim_{x \to 2} \sqrt{x^3 - 2x}$ ... صدارد

$\lim_{x \to 2^+} \sqrt{x^3 - 2x} = \sqrt{0^+} = 0$

$\lim_{x \to 2^-} \sqrt{x^3 - 2x} = \sqrt{0^-}$ ... صدارد

$\lim_{x \to 2} \sqrt{x^3 - 2x}$ ... صدارد

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(۱۰) $\lim_{x \to 2} \frac{|x-2|}{x^3 - 2x^2 - x + 2}$ ... صوارد

$\lim_{x \to 2^+} \frac{x-2}{(x-2)(x^2-1)} \xrightarrow{\text{تجزیه}} \frac{x-2}{(x-2)(x-1)(x+1)}$

$= \frac{1}{(x-1)(x+1)} \to \frac{1}{3 \times 4} = \frac{1}{12}$

$\lim_{x \to 2^-} \frac{x-2}{(x-2)(x-1)(x+1)} = \frac{1}{(x-1)(x+1)} \to \frac{1}{3 \times 4} = \frac{1}{12}$

$\lim_{x \to 2} \frac{|x-2|}{x^3 - 2x^2 - x + 2} = \frac{1}{12}$

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

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

صوارد