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

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

③ $\lim_{x\to 2^+}[4x-3] = \begin{cases} x>2 \xrightarrow{\times 4} 4x>8 \\ \xrightarrow{-3} 4x-3>5 \end{cases} \Rightarrow 5$ $\qquad$ $\lim_{x\to 2^-}[4x-3] : \begin{cases} x<2 \xrightarrow{\times 4} 4x<8 \\ \xrightarrow{-3} 4x-3<5 \end{cases} \Rightarrow 4$

$\left[\lim_{x\to 2^+} 4x-3\right] = 5$ $\qquad$ $\left[\lim_{x\to 2^-} 4x-3\right] = 5$

$\lim_{x\to 3} \frac{4x-3}{x-3} = \frac{9}{0}$ ← جواب ندارد $(\pm\infty)$ $\qquad$ $\lim_{x\to 3} \frac{4x-3}{(x-3)^2} = +\infty$

$\lim_{x\to 3} \frac{4x-3}{\sqrt{x-3}} = +\infty$ $\qquad$ $\lim_{x\to 3} \frac{4x-3}{\sqrt{x^2-4x+3}} = +\infty$

$\lim_{x\to 3} \frac{4x-3}{x^2-7x+12}$: جواب نداریم

$\lim_{x\to 3} \frac{4x-3}{[x-3]}$ → $\lim_{x\to 3^+} \frac{4x-3}{0} =$ جواب ندارد

→ $\lim_{x\to 3^-} \frac{4x-3}{-1} = -9$ $\quad x=3$

$\lim_{x\to 3} [3x]+[-2x]$

→ $\lim_{x\to 3^+} [3x]+[-2x] = 9-4 = 5$

→ $\lim_{x\to 3^-} [3x]+[-2x] = 8-4 = 4$

$\lim_{x\to -4} [-3x]+[2x]$

→ $\lim_{x\to -4^-} [-3x]+[2x] = 24-12 = 12$

→ $\lim_{x\to -4^+} [-3x]+[2x] = 23-12 = 11$

$$\lim_{x\to 2}\ [x^2-3x]$$

$$= \begin{cases} \lim\limits_{x\to 2^+} [x^2-3x] = -2 \\ \lim\limits_{x\to 2^-} x^2-3x = -2 \end{cases}$$

$$\lim_{x\to 3}\ [4x-x^2]$$

$$= \begin{cases} \lim\limits_{x\to 3^+} [4x-x^2] = 9 \\ \lim\limits_{x\to 3^-} [9x-x^2] = 18 \end{cases}$$

نزدیک

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

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

جواب نزدیک

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

حد ندارد

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

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

$$\lim_{x\to 1^-} \frac{x-0}{x^2-1} \to -\infty$$