۱)

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

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۲)

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

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۳)

$\lim_{x \to 2^+} [4x-3] = [4x]-3 \to 5$ ب $\lim_{x \to 2^-} [4x-3] = 7-3, 4 \quad 1$

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۴)

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

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۵)

$\lim_{x \to 3} \frac{4x-3}{x-3}$ $3^+ : \frac{9}{0^+} = +\infty$ ، $3^- : \frac{9}{0^-} = -\infty$

$\lim_{x \to 3} \frac{4x-3}{(x-3)^2}$ $3^+ : \frac{9}{0^+} = +\infty$ ، $3^- : \frac{9}{0^+} = +\infty$

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۶)

$\lim_{x \to 3} \frac{4x-3}{\sqrt{x-3}} \to$ $3^+ : \frac{9}{0^+} = +\infty$ ، 3^- : ندارد

$x^2-4x+3 = (x-1)(x-3)$

$\begin{array}{ccccc} & 1 & & 3 & \\ + & | & - & | & + \end{array}$

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

$\xrightarrow{3^+} \frac{9}{0^+} = +\infty$

$\xrightarrow{3^-} \frac{9}{\sqrt{0^-}}$ = تعریف نشده

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۷)

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

$x^2-7x+12 = (x-3)(x-4) \to$ $\begin{array}{ccccc} & 3 & & 4 & \\ + & | & - & | & + \end{array}$

$\xrightarrow{3^+} \frac{9}{0^-} = -\infty$

$\xrightarrow{3^-} \frac{9}{0^+} = +\infty$

ب) $\lim\limits_{x\to 3} \frac{4x-3}{[x-3]} \to \frac{4x-3}{[x]-3} \to \begin{cases} 3^+ & \frac{9}{0^-} = \text{تن} \\ 3^- & \frac{9}{-1} = -9 \end{cases}$

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۸)

$\lim\limits_{x\to 3} [3x] + [-2x] = \begin{cases} 3^+ & 9 - 7 = 2 \\ 3^- & 8 - 6 = 2 \end{cases}$

$\lim\limits_{x\to -6} [-4x] + [2x] = \begin{cases} -6^+ \;(-5{,}9) & [23{,}6] + [-11{,}8] = 23 - 12 = 11 \\ -6^- \;(-6{,}1) & [24{,}4] + [-12{,}2] = 24 - 13 = 11 \end{cases}$

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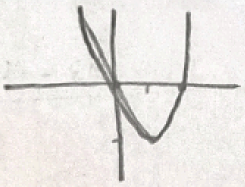
۹) $\lim\limits_{x\to 2} [x^2 - 4x] =$  $x^2 - 4x = x(x-4) \to$ ریشه‌ها ۰، ۴

$\frac{-b}{2a} = \frac{4}{2} = 2 \to 4 - 8 = -4$

$\lim\limits_{x\to 2} [x^2 - 4x] = -4$

ب) $\lim\limits_{x\to 3} [6x - x^2] \to \frac{-b}{2a} = \frac{-6}{-2} = 3 \to \max$ تابع $\to 3\times 6 - 9 = 9$

$\lim\limits_{x\to 3} [6x - x^2] = 8$

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۱۰)

$\lim\limits_{x\to 2} \frac{|x-2|}{x^2 - 3x + 2} = \frac{|x-2|}{(x-1)(x-2)} \begin{cases} 2^+ & \frac{\cancel{x-2}}{(x-1)\cancel{(x-2)}} = \frac{1}{1} = 1 \\ 2^- & \frac{-\cancel{(x-2)}}{(x-1)\cancel{(x-2)}} = \frac{-1}{1} = -1 \end{cases}$

$x^2 - 1 = \begin{array}{c|c|c} -1 & & +1 \\ + & - & + \end{array}$

ب) $\lim\limits_{x\to 1} \frac{x - [x]}{x^2 - 1} = \frac{0}{0} \begin{cases} 1^+ & \frac{x-1}{x^2-1} = \frac{\cancel{(x-1)}}{(x+1)\cancel{(x-1)}} = \frac{1}{2} \\ & \to x \xrightarrow{1^-} \frac{x}{x^2-1} = \frac{1}{0^-} = -\infty \end{cases}$