

Date:

باربع وقتوع

بسم رب الذوق العلي

Subject: 19, 8

مبارك

الف) $\lim_{x \rightarrow 2^+} f(x) - 3 = 5$ ب) $\lim_{x \rightarrow 2^-} f(x) - 3 = 5$ 5

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الف) $\lim_{x \rightarrow 2^+} [f(x) - 3] = 5$ ب) $\lim_{x \rightarrow 2^-} [f(x) - 3] = 5$ 5

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الف) $\lim_{x \rightarrow 2^+} \frac{f(x) - 3}{x - 2} = \frac{9}{0^+} = +\infty$ ب) $\lim_{x \rightarrow 2^-} \frac{f(x) - 3}{(x - 2)^2} = \frac{9}{0^+} = +\infty$ 5

الف) $\lim_{x \rightarrow 2^+} \frac{f(x) - 3}{\sqrt{x - 2}} = \frac{9}{0^+} = +\infty$ ب) $\lim_{x \rightarrow 2^+} \frac{f(x) - 3}{\sqrt{(x - 2)(x - 1)}} = \frac{9}{0^+} = +\infty$ 5

الف) $\lim_{x \rightarrow 2^+} \frac{f(x) - 3}{(x - 2)(x - 1)} = \frac{9}{0^+} = +\infty$ ب) $\lim_{x \rightarrow 2^+} \frac{f(x) - 3}{[x - 2]^2} = \frac{9}{0^+} = +\infty$ 5

$x^+ \rightarrow \frac{9}{0} = +\infty$

$x^- \rightarrow \frac{9}{-1} = -9$

8) $\lim_{x \rightarrow 4} [3x] + [-2x] \begin{cases} x^+ \rightarrow [9^+] + [-8^+] = 9 - 8 = 1 \\ x^- \rightarrow [9^-] + [-8^-] = 9 - 8 = 1 \end{cases}$ (1)

9) $\lim_{x \rightarrow -4} [-5x] + [2x] \begin{cases} x^+ \rightarrow [-20^+] + [8^+] = -20 + 8 = -12 \\ x^- \rightarrow [-20^-] + [8^-] = -20 + 8 = -12 \end{cases}$ (1)

(1) = حد دارد ←

10) $\lim_{x \rightarrow 2} [x^2 - 5x] \begin{cases} x^+ \rightarrow [(4-10)^+] = [-6^+] = -6 \\ x^- \rightarrow [(4-10)^-] = [-6^-] = -6 \end{cases}$ (1)

11) $\lim_{x \rightarrow 2} [9x - x^2] \begin{cases} x^+ \rightarrow [(18-4)^+] = [14^+] = 14 \\ x^- \rightarrow [(18-4)^-] = [14^-] = 14 \end{cases}$ (1)

12) $\lim_{x \rightarrow 2} \frac{|x-1|}{2x^2 - 5x + 2} \begin{cases} x^+ \rightarrow \frac{1}{(4-10+2)} = \frac{1}{-4} \\ x^- \rightarrow \frac{-1}{(2(4+1)-10+2)} = \frac{-1}{-4} \end{cases}$ (1)

13) $\lim_{x \rightarrow 1} \frac{x - [x]}{x^2 - 1} \begin{cases} x^+ \rightarrow \frac{1-1}{1-1} = \frac{0}{0} \\ x^- \rightarrow \frac{1-1}{1-1} = \frac{0}{0} \end{cases}$ (1)

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

$x^- \rightarrow \frac{-1}{(x+1)(x-1)} = -1$