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نام و نام خانوادگی ... دانشپژا ... باسرخانه تشریحی تکلیف شماره ۱۹ کلاس ...

معمولاً هرکدام از اینها را حساب کنید. (در صورت لزوم حد را در دستگاهی بنویسید.)

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

ب) $\lim_{x \rightarrow 2^-} f(x-2) = a$

$2 \rightarrow 1-2 = (a)$

$2 \rightarrow 1-2 = (a)$

9

1

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

ب) $\lim_{x \rightarrow 2^-} f[x]-2$

$[2^+] \Rightarrow 2$

$[2^-] \Rightarrow 1$

$f \times 2 - 2 = (a)$

$f \times 1 - 2 = (1)$

9

2

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

ب) $\lim_{x \rightarrow 2^-} [f(x-2)]$

$[1^+-2] \Rightarrow [a^+] = (a)$

$[1^-2] = [a^-] = (f)$

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3

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

ب) $\lim_{x \rightarrow 2^-} [f(x-2)]$

$\left[\frac{\lim_{x \rightarrow 2^+} \cancel{1^+} \times \cancel{1^+}}{a^+} \right] \Rightarrow [a] = (a)$

$\left[\frac{\lim_{x \rightarrow 2^-} \cancel{1^-} \times \cancel{1^-}}{a^-} \right] \Rightarrow [a] = (a)$

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الف) $\lim_{x \rightarrow 0^+} \frac{f(x)-2}{x-2} = \frac{12-2}{10-2} = \frac{9}{8}$

ب) $\lim_{x \rightarrow 0^+} \frac{f(x)-2}{(x-2)^2} = \frac{12-2}{(10-2)^2} = \frac{9}{64}$

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

$0^+ \rightarrow \frac{9}{(0^+)^2} = \frac{9}{0^+} = +\infty$

$0^- \rightarrow \frac{9}{0^-} = -\infty$

$0^- \rightarrow \frac{9}{(0^-)^2} = \frac{9}{0^+} = +\infty$

در نوبت 9

5

$$\text{a)} \lim_{x \rightarrow 4} \frac{f(x)-f}{\sqrt{x}-4} = \frac{11-11}{\sqrt{0^+}-4} = \frac{0}{0^+}$$

$$\xrightarrow{4^+} \frac{0}{0^+} = \frac{0}{0^+} = +\infty$$

بلا جواب

$$\xrightarrow{4^-} \frac{0}{0^-} = \frac{0}{0^-} = -\infty$$

$$\text{ب)} \lim_{x \rightarrow 4} \frac{f(x)-f}{\sqrt{4x^2-16x+11}} = \frac{0}{\sqrt{0^+}-8+11} = \frac{0}{0^+}$$

$$\xrightarrow{4^+} \frac{0}{0^+} = \frac{0}{0^+} = +\infty$$

$$\xrightarrow{4^-} \frac{0}{0^-} = \frac{0}{0^-} = -\infty$$

6

$$\text{a)} \lim_{x \rightarrow 1} \frac{f(x)-f}{x^2-4x+11} = \frac{0}{0^+}$$

$$\xrightarrow{1^+} \frac{0}{0^+} = -\infty$$

بلا جواب

$$\xrightarrow{1^-} \frac{0}{0^+} = +\infty$$

$$\text{ب)} \lim_{x \rightarrow 1} \frac{f(x)-f}{[x-1]} = \frac{0}{0^+}$$

$$\xrightarrow{1^+} \frac{0}{0^+} = \frac{0}{0^+} = +\infty$$

$$\xrightarrow{1^-} \frac{0}{0^-} = \frac{0}{-1} = -1$$

بلا جواب

7

$$\text{a)} \lim_{x \rightarrow 1} [f(x)] + [-f(x)]$$

$$\xrightarrow{1^+} [9^+] + [-4^+] = 9 - 4 = 5$$

$$9 - 4 = 5$$

$$\xrightarrow{1^-} [9^-] + [-4^-] = 1 - 4 = -3$$

$$1 - 4 = -3$$

$$\text{ب)} \lim_{x \rightarrow 4} [-f(x)] + [f(x)]$$

$$\xrightarrow{4^+} [-11^+] + [11^+] = -11 + 11 = 0$$

$$-11 + 11 = 0$$

$$\xrightarrow{4^-} [-11^-] + [11^-] = 11 - 11 = 0$$

$$11 - 11 = 0$$

بلا جواب

8

$$\text{a)} \lim_{x \rightarrow 1} [x^2 - f(x)]$$

$$\xrightarrow{1^+} [1^+] - [1^+] = [0^+] = 0$$

$$\xrightarrow{1^-} x(x-f) = 1^- \cdot 1 - 1^- = [0^-] = -0$$

بلا جواب

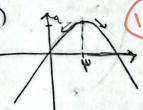
$$[0^+] = -0$$

$$\text{ب)} \lim_{x \rightarrow 1} [4x - x^2] \rightarrow 4(1) - 1$$

$$\xrightarrow{1^+} [4] - [1] = 3$$

$$\xrightarrow{1^-} [4] - [1] = 3$$

$$\max \left| \frac{b}{4a} = \frac{-4}{4} = -1 \right.$$



1, 0

9

$$\text{a)} \lim_{x \rightarrow 1} \frac{|x-1|}{x^2-4x+11} = \frac{0^+}{0^+}$$

$$\xrightarrow{1^+} \frac{|x-1|}{(x-1)(x-11)} = \frac{1^+}{x-1} \rightarrow \frac{1^+}{1^+} = 1$$

$$\xrightarrow{1^-} \frac{-(x-1)}{(x-1)(x-11)} = \frac{-1}{x-1} \rightarrow \frac{-1}{1^-} = -1$$

$$\text{ب)} \lim_{x \rightarrow 1} \frac{x(x-1)}{x^2-1} = \frac{0}{0}$$

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

$$\xrightarrow{1^-} \frac{x-1}{(x-1)(x+1)} = \frac{1^-}{0^-} = -\infty$$

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