

نام و نام خانوادگی فاطمه امین نزار پاسخنامه تشریحی تکلیف شماره ۱.۸ ... کلاس بیاضیم چهارم A

الف) $\lim_{x \rightarrow 2^+} \frac{x+5}{x+1} = \frac{9}{3} = 3$

ب) $\lim_{x \rightarrow 2^-} \frac{x+5}{x+1} = \frac{9}{3} = 3$

ج) $\lim_{x \rightarrow 2} \frac{x+5}{x+1} = \frac{9}{3} = 3$

د) $\lim_{x \rightarrow 0} \frac{x+7}{[x^2]} = \frac{x+7}{0}$ و.ج

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الف) $\lim_{x \rightarrow 8^-} f(x) - 2 = 8 - 2 = 6$

ب) $\lim_{x \rightarrow 8^-} [f(x) - 2] = 6$

ج) $\left[\lim_{x \rightarrow 8^-} f(x) - 2 \right] = 10$

د) $\left[\lim_{x \rightarrow 8^+} f(x) - 2 \right] = 10$

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الف) $\lim_{x \rightarrow 5^-} \frac{f(x)+1}{2} = \frac{5}{2}$

ب) $\lim_{x \rightarrow 5^-} \left[\frac{f(x)+1}{2} \right] = 5$

ج) $\left[\lim_{x \rightarrow 5^-} \frac{f(x)+1}{2} \right] = 5$

د) $\left[\lim_{x \rightarrow 5^+} \frac{f(x)+1}{2} \right] = 5$

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الف) $\lim_{x \rightarrow 1} \frac{x-5}{x^2-4x+5} = \lim_{x \rightarrow 1} \frac{1}{x-1}$ $\begin{cases} 1^+ & \frac{1}{0^+} = +\infty \\ 1^- & \frac{1}{0^-} = -\infty \end{cases}$

ب) $\lim_{x \rightarrow 2} \frac{x-2}{(x-2)^2}$ $\begin{cases} 2^+ & \frac{-1}{0^+} = -\infty \\ 2^- & \frac{-1}{0^-} = -\infty \end{cases}$

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الف) $\lim_{x \rightarrow -2} [-f(x)] - \{5x\}$ $\begin{cases} -2^+ & 8 - (-15) = 23 \\ -2^- & 9 - (-14) = 23 \end{cases}$

ب) $\lim_{x \rightarrow (\frac{1}{14})^-} \left[\frac{-1}{x^2} \right] = -14$

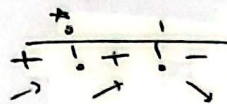
$x < \frac{1}{14} \rightarrow x^2 > \frac{1}{14} \rightarrow \frac{1}{x^2} < 14 \rightarrow \frac{-1}{x^2} > -14$

$\left[\frac{-1}{x^2} \right] = -14$

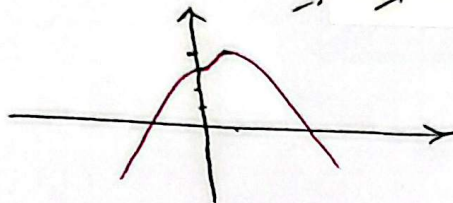
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$$\text{ا) } \lim_{x \rightarrow 1} [x^r - rx^{r-1} + r] = r$$

$$y = -rx^r + rx^{r-1} + r \rightarrow y' = -rx^{r-1} + (r-1)rx^{r-2} \rightarrow y' = -12x^r(x-1)$$



$$\text{ب) } \lim_{x \rightarrow 0} [x^r - rx^{r-1} + r] \begin{cases} x^+ & r \\ x^- & r \end{cases}$$



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$$\text{ا) } \lim_{x \rightarrow r} \frac{|x^r - r|}{x^r - r} \begin{cases} r^+ & \frac{|x-r|(x^r + rx + r)}{(x-r)(x+r)} = \frac{|x^r + rx + r|}{x+r} = \frac{1r}{r} = r \\ r^- & \frac{-(x-r)(x^r + rx + r)}{(x-r)(x+r)} = \frac{-(x^r + rx + r)}{x+r} = \frac{-1r}{r} = -r \end{cases}$$

$$\text{ب) } \lim_{x \rightarrow \pi} \frac{|\sin x|}{\sin x} \begin{cases} \pi^+ & \frac{|\sin x|}{r \sin x \cos x} = \frac{-1}{r \cos x} = \frac{-1}{-r} = \frac{1}{r} \\ \pi^- & \frac{|\sin x|}{r \sin x \cos x} = \frac{1}{r \cos x} = \frac{-1}{r} \end{cases}$$

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$$\text{ا) } \lim_{x \rightarrow \frac{\pi}{r}} \sqrt{\cos x} \begin{cases} \frac{\pi}{r}^+ & 0 \\ \frac{\pi}{r}^- & \text{ج.ب} \end{cases}$$

$$\text{ب) } \lim_{x \rightarrow 0} \sqrt{x - 2\sqrt{x}} \begin{cases} x^+ & x - 2\sqrt{x} \geq 0 \rightarrow \sqrt{x}(\sqrt{x} - 2) \geq 0 \rightarrow \frac{0}{+1-1+} \rightarrow \frac{0}{\text{موجب}} \text{ ج.ب} \\ x^- & \text{ج.ب} \end{cases}$$

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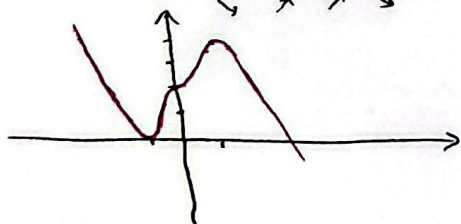
$$\text{ا) } \lim_{x \rightarrow 0^-} \frac{(-1)^{\lfloor \sin x \rfloor}}{x^r(x-1)} = \frac{(-1)^0}{x^r(x-1)} = \frac{1}{x^r(x-1)} = \frac{1}{0^-} = -\infty$$

$$\text{ب) } \lim_{x \rightarrow r} \frac{x^r - [x^r]}{x - [x]} \begin{cases} r^+ & \frac{x^r - r}{x - r} = \frac{(x-r)(x+r)}{x-r} = x+r = r \\ r^- & \frac{x^r - r}{x - r} = 0 \end{cases}$$

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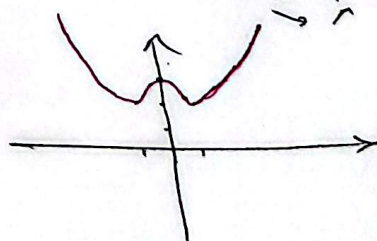
$$\text{ا) } y = -rx^3 + 3x^2 + r \rightarrow y' = -12x^2 + 6x$$

$$-12x^2(x-1) \begin{matrix} -1 & 0 & 1 \\ -1 & +1 & +1 \\ \rightarrow & x & \rightarrow \end{matrix}$$



$$\text{ب) } y = x^r - rx^{r-1} + r \rightarrow y' = rx^{r-1} - (r-1)rx^{r-2}$$

$$rx(x^{r-1}-1) \begin{matrix} -1 & 0 & 1 \\ -1 & +1 & -1 \\ \rightarrow & x & \rightarrow \end{matrix}$$



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