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الف) $\lim_{x \rightarrow 2^+} \frac{4x+2}{x+1} = \frac{9}{3} = 3$

ب) $\lim_{x \rightarrow 2^-} \frac{4x+2}{x+1} = \frac{9}{3} = 3$

ج) $\lim_{x \rightarrow 2} \frac{4x+2}{x+1} = \frac{9}{3} = 3$ $\left\{ \begin{array}{l} \lim_{x \rightarrow 2^+} \frac{4x+2}{x+1} = 3 \\ \lim_{x \rightarrow 2^-} \frac{4x+2}{x+1} = 3 \end{array} \right.$

د) $\lim_{x \rightarrow 0} \frac{4x+1}{[x]}$ $\left\{ \begin{array}{l} \rightarrow 0^+ \rightarrow \infty \\ \rightarrow 0^- \rightarrow \frac{1}{-1} = -1 \end{array} \right.$

الف) $\lim_{x \rightarrow 2^-} f(x) - 2 = f(2) - 2 = 9$

2

ب) $\lim_{x \rightarrow 2^-} [4x-2] = [14-2] = [12] = 12$

ج) $\left[\lim_{x \rightarrow 2^-} (4x-2) \right] = 10$

د) $\left[\lim_{x \rightarrow 2^+} (4x-2) \right] = 10$

الف) $\lim_{x \rightarrow 2^-} \frac{4x+1}{x} = \frac{9}{2} = \frac{9}{2}$

3

ب) $\lim_{x \rightarrow 2^-} \left[\frac{4x+1}{x} \right] = [5] = 5$

ج) $\left[\lim_{x \rightarrow 2^-} \frac{4x+1}{x} \right] = 5$

د) $\left[\lim_{x \rightarrow 2^+} \frac{4x+1}{x} \right] = 5$

[K]

ا) $\lim_{x \rightarrow 1} \frac{x-2}{x^2-4x+4} = \frac{x-2}{(x-1)(x-2)} = \frac{1}{x-1}$ $\left\{ \begin{array}{l} 1^+ \rightarrow \frac{1}{+} \\ 1^- \rightarrow -\frac{1}{-} \end{array} \right.$

ب) $\lim_{x \rightarrow 3} \frac{x-4}{x^2-4x+9} = \frac{x-4}{(x-3)^2}$ $\left\{ \begin{array}{l} 3^+ \rightarrow \frac{-1}{0^+} = -\infty \\ 3^- \rightarrow \frac{-1}{0^+} = -\infty \end{array} \right.$

الف) $\lim_{x \rightarrow -3} [-3x] - [2x]$ $\left\{ \begin{array}{l} -3^+ \rightarrow [9^-] - [-12^+] = 1+12=13 \\ -3^- \rightarrow [4^+] - [-12^-] = 4+12=16 \end{array} \right.$

[a]

ب) $\lim_{x \rightarrow (-\frac{1}{4})} \left[\frac{1}{x^4} \right] = \left[\frac{1}{\frac{1}{14}} \right] = [14^-] = 14$