

الف) $\lim_{x \rightarrow 2^+} \frac{x-2}{x-2} = \frac{x-2}{x-2} = 1$ ب) $\lim_{x \rightarrow 2^-} \frac{x-2}{x-2} = \frac{x-2}{x-2} = 1$ -۱

الف) $\lim_{x \rightarrow 2^+} \frac{4[x]-2}{x-2} = \frac{4[2^+]-2}{x-2} = 1$ ب) $\lim_{x \rightarrow 2^-} \frac{4[x]-2}{x-2} = \frac{4[2^-]-2}{x-2} = 1$ -۲

الف) $\lim_{x \rightarrow 2^+} \frac{4x-2}{x-2} = [5^+] = 5$ ب) $\lim_{x \rightarrow 2^-} \frac{4x-2}{x-2} = [5^-] = 4$ -۳

الف) $\lim_{x \rightarrow 2^+} \left[\frac{4x-2}{x-2} \right] = [5] = 5$ ب) $\lim_{x \rightarrow 2^-} \left[\frac{4x-2}{x-2} \right] = [5] = 5$ -۴

الف) $\lim_{x \rightarrow 2^+} \frac{x-2}{x-2} \begin{cases} \nearrow \frac{0}{0^+} = +\infty \\ \searrow \frac{0}{0^-} = -\infty \end{cases}$ ب) $\lim_{x \rightarrow 2^-} \frac{x-2}{(x-2)^2} \begin{cases} \nearrow \frac{0}{0^+} = +\infty \\ \searrow \frac{0}{0^-} = +\infty \end{cases}$ -۵

الف) $\lim_{x \rightarrow 2^+} \frac{x-2}{\sqrt{x-2}} \begin{cases} \nearrow \frac{0}{\sqrt{0^+}} = +\infty \\ \searrow \frac{0}{\sqrt{0^-}} = 0 \end{cases}$ ب) $\lim_{x \rightarrow 2^-} \frac{x-2}{\sqrt{2^2-x^2+2}} \begin{cases} \nearrow \frac{0}{\sqrt{0^+}} = +\infty \\ \searrow \frac{0}{\sqrt{0^-}} = 0 \end{cases}$ -۶

$\frac{1}{+|-|-|+}$

الف) $\lim_{x \rightarrow 2^+} \frac{x-2}{x^2-7x+12} \begin{cases} \nearrow \frac{0}{0^-} = -\infty \\ \searrow \frac{0}{0^+} = +\infty \end{cases}$ ب) $\lim_{x \rightarrow 2^-} \frac{x-2}{[x-2]} \begin{cases} \nearrow \frac{0}{0} = 0 \\ \searrow \frac{0}{-1} = -0 \end{cases}$ -۷

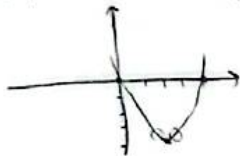
$\frac{2}{+|-|-|+}$

الف) لي $[x_1] + [-x_2]$ $\begin{cases} x^+ \\ x^- \end{cases}$ $[9^+] + [-6^-] = 9 - 6 = \boxed{3}$
 $x \rightarrow 9$ $[9^-] + [-6^+] = 9 - 6 = \boxed{3}$

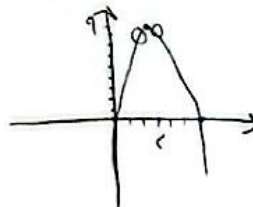
- 8

ب) لي $[-x_1] + [x_2]$ $\begin{cases} x^+ \\ x^- \end{cases}$ $2x - 1x = \boxed{11}$
 $x \rightarrow -4$ $2x - 1x = \boxed{11}$
 $x > -4$ $x > -4$ $x < -4$ $x < -4$
 $x_2 > -2x$ $x_2 > -1x$ $x_2 < -2x$ $x_2 < -1x$
 $-x_2 < 2x$ $-x_2 > 2x$

الف) لي $[x^2 - 4x]$ $\begin{cases} x^+ \\ x^- \end{cases}$ $[-4]$
 $x \rightarrow 2$ $[-4]$



ب) لي $[x_2 - x_1]$ $\begin{cases} x^+ \\ x^- \end{cases}$ 8
 $x \rightarrow 2$ 8



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الف) لي $\frac{|x-1|}{x^2 - x + 1}$ $\begin{cases} x^+ \\ x^- \end{cases}$ $\frac{x-1}{(x-1)(x+1)} = \frac{1}{x+1} = \boxed{1}$
 $x \rightarrow 1$ $\frac{1-x}{(x-1)(x+1)} = \frac{-1}{x+1} = \boxed{-1}$

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ب) لي $\frac{x - [x]}{x^2 - 1}$ $\begin{cases} x^+ \\ x^- \end{cases}$ $\frac{x-1}{(x-1)(x+1)} = \frac{1}{x+1}$
 $x \rightarrow 1$ $\frac{1}{x^2 - 1} = \frac{1}{0} = \boxed{-\infty}$

