

<p>الف) $\lim_{x \rightarrow 2^+} f(x) - 3 = f(2^+) - 3 = 5$ ✓</p>	<p>ب) $\lim_{x \rightarrow 2^-} f(x) - 3 = f(2^-) - 3 = 5$ ✓</p>	<p>۱</p>
<p>الف) $\lim_{x \rightarrow 2^+} f[x] - 3 = f[2^+] - 3 = 1 - 3 = -2$ ✓</p>	<p>ب) $\lim_{x \rightarrow 2^-} f[x] - 3 = f[2^-] - 3 = 4 - 3 = 1$ ✓</p>	<p>۲</p>
<p>الف) $\lim_{x \rightarrow 2^+} [f(x) - 3] = [f(2^+) - 3] = [5] = 5$ ✓</p>	<p>ب) $\lim_{x \rightarrow 2^-} [f(x) - 3] = [f(2^-) - 3] = [5] = 5$ ✓</p>	<p>۳</p>
<p>الف) $\left[\lim_{x \rightarrow 2^+} f(x) - 3 \right] = [5] = 5$ ✓</p>	<p>ب) $\left[\lim_{x \rightarrow 2^-} f(x) - 3 \right] = [5] = 5$ ✓</p>	<p>۴</p>
<p>الف)</p> $\lim_{x \rightarrow 3} \frac{f(x) - 3}{x - 3} \begin{matrix} \nearrow_{2^+} & \frac{9}{0^+} = +\infty \checkmark \\ \searrow_{2^-} & \frac{9}{0^-} = -\infty \checkmark \end{matrix}$	<p>ب)</p> $\lim_{x \rightarrow 3} \frac{f(x) - 3}{(x - 3)^2} \begin{matrix} \nearrow_{2^+} & \frac{9}{0^+} = +\infty \checkmark \\ \searrow_{2^-} & \frac{9}{0^+} = +\infty \checkmark \end{matrix}$	<p>۵</p>

الف) $\lim_{x \rightarrow 0} \frac{x^2 - 1}{\sqrt{x} - 1}$

$x^+ \rightarrow \frac{0}{\sqrt{0} - 1} = 0$ ✓
 $x^- \rightarrow \frac{0}{\sqrt{0} - 1} = 0$ ✓

ب) $\lim_{x \rightarrow 0} \frac{x^2 - 1}{\sqrt{x} + 1}$

$x^+ \rightarrow \frac{0}{\sqrt{0} + 1} = 0$ ✓
 $x^- \rightarrow \frac{0}{\sqrt{0} + 1} = 0$ ✓

الف) $\lim_{x \rightarrow 0} \frac{x^2 - 1}{x^2 - \sqrt{x} + 1}$

$x^+ \rightarrow \frac{0}{0} = 0$ ✓
 $x^- \rightarrow \frac{0}{0} = 0$ ✓

رابطان نزدیکیم!

ب) $\lim_{x \rightarrow 0} \frac{x^2 - 1}{[x - 1]}$

$x^+ \rightarrow \frac{0}{0} = 0$ ✓
 $x^- \rightarrow \frac{0}{-1} = 0$ ✓

الف) $\lim_{x \rightarrow 0} [x^2] + [-2x]$

$x^+ \rightarrow [0^+] + [-0^+] = 0 - 0 = 0$ ✓
 $x^- \rightarrow [0^-] + [-0^+] = 0 - 0 = 0$ ✓

ب) $\lim_{x \rightarrow -4} [-x^2] + [2x]$

$-4^+ \rightarrow [16^-] + [-8^+] = 16 - 8 = 8$ ✓
 $-4^- \rightarrow [16^+] + [-8^-] = 16 - 8 = 8$ ✓

الف) $\lim_{x \rightarrow 2} [x^2 - 4x]$

$x^+ \rightarrow [0^+] = 0$
 $x^- \rightarrow [0^-] = 0$

$\lim_{x \rightarrow 2} [-x^+] = -2$

ب) $\lim_{x \rightarrow 3} [4x - x^2] = [9] = 9$

الف) $\lim_{x \rightarrow 1} \frac{|x-1|}{x^2 - 3x + 2}$

$x^+ \rightarrow \frac{0}{(1-1)(1-1)} = \frac{0}{0}$ ✓
 $x^- \rightarrow \frac{0}{(1-1)(1-1)} = \frac{0}{0}$ ✓

دقت!

$\lim_{x \rightarrow 1} \frac{|x-1|}{x^2 - 3x + 2} = 1$
 $\lim_{x \rightarrow 1} \frac{|x-1|}{x^2 - 3x + 2} = -1$

ب) $\lim_{x \rightarrow 1} \frac{x - [x]}{x^2 - 1}$

$x^+ \rightarrow \frac{0}{(1-1)(1+1)} = \frac{0}{0}$ ✓
 $x^- \rightarrow \frac{0}{1^2 - 1} = -\infty$ ✓