

<p>الف) $\lim_{x \rightarrow 2^+} \varepsilon x - 3$</p> <p>$\varepsilon(2) - 3 = 1 - 3 = \varepsilon$ ✓</p>	<p>ب) $\lim_{x \rightarrow 2^-} \varepsilon x - 3$</p> <p>$\varepsilon(2) - 3 = 1 - 3 = \varepsilon$ ✓</p>	<p>(۲)</p> <p>۱</p>
<p>الف) $\lim_{x \rightarrow 2^+} \varepsilon [x] - 3$</p> <p>$\varepsilon [2^+] - 3 = 1 - 3 = \varepsilon$ ✓</p>	<p>ب) $\lim_{x \rightarrow 2^-} \varepsilon [x] - 3$</p> <p>$\varepsilon [2^-] - 3 = \varepsilon - 3 = \varepsilon$ ✓</p>	<p>(۲)</p> <p>۲</p>
<p>الف) $\lim_{x \rightarrow 2^+} [\varepsilon x - 3]$</p> <p>$x > 2 \Rightarrow \varepsilon x > 1 \Rightarrow \varepsilon x - 3 > \varepsilon$</p> <p>$[\varepsilon x - 3] = [1 - 3] = [\varepsilon^+] = \varepsilon$ ✓</p>	<p>ب) $\lim_{x \rightarrow 2^-} [\varepsilon x - 3]$</p> <p>$x < 2 \Rightarrow \varepsilon x < 1 \Rightarrow \varepsilon x - 3 < \varepsilon$</p> <p>$[\varepsilon x - 3] = [1 - 3] = [\varepsilon^-] = \varepsilon$ ✓</p>	<p>(۲)</p> <p>۳</p>
<p>الف) $\left[\lim_{x \rightarrow 2^+} \varepsilon x - 3 \right]$</p> <p>$\lim_{x \rightarrow 2^+} \varepsilon x - 3 = 1 - 3 = \varepsilon$ $[\varepsilon] = \varepsilon$ ✓</p>	<p>ب) $\left[\lim_{x \rightarrow 2^-} \varepsilon x - 3 \right]$</p> <p>$\lim_{x \rightarrow 2^-} \varepsilon x - 3 = 1 - 3 = \varepsilon$ $[\varepsilon] = \varepsilon$ ✓</p>	<p>(۲)</p> <p>۴</p>
<p>الف) $\lim_{x \rightarrow 3} \frac{\varepsilon x - 3}{x - 3}$</p> <p>$x \rightarrow 3^+ \rightarrow \frac{9}{0^+} = +\infty$ ✓</p> <p>$x \rightarrow 3^- \rightarrow \frac{9}{0^-} = -\infty$ (محدود ندارد)</p>	<p>ب) $\lim_{x \rightarrow 3} \frac{\varepsilon x - 3}{(x - 3)^2}$</p> <p>$x \rightarrow 3^+ \rightarrow \frac{9}{0^+} = +\infty$ ✓</p> <p>$x \rightarrow 3^- \rightarrow \frac{9}{(0^-)^2} = \frac{9}{0^+} = +\infty$ (محدود ندارد)</p>	<p>(۲)</p> <p>۵</p>

<p>الف) $\lim_{x \rightarrow 3} \frac{4x-3}{\sqrt{x-2}} \xrightarrow{x \rightarrow 3^+} \frac{9}{\sqrt{0^+}} = \frac{9}{0^+} = +\infty$</p> <p>$\xrightarrow{x \rightarrow 3^-} \frac{9}{\sqrt{0^-}} = -\infty$</p> <p>(حد ندارد)</p>	<p>ب) $\lim_{x \rightarrow 3} \frac{4x-3}{\sqrt{x^2-4x+3}} \xrightarrow{x \rightarrow 3^+} \frac{9}{\sqrt{0^+}} = \frac{9}{0^+} = +\infty$</p> <p>$\xrightarrow{x \rightarrow 3^-} \frac{9}{\sqrt{0^-}} = -\infty$</p> <p>(حد ندارد)</p>
<p>الف) $\lim_{x \rightarrow 3} \frac{4x-3}{x^2-7x+12} \xrightarrow{x \rightarrow 3^+} \frac{9}{0^+} = -\infty$</p> <p>$\xrightarrow{x \rightarrow 3^-} \frac{9}{0^-} = +\infty$</p> <p>(حد ندارد)</p>	<p>ب) $\lim_{x \rightarrow 3} \frac{4x-3}{[x-3]} \xrightarrow{x \rightarrow 3^+} \frac{9}{[0^+]} = \frac{9}{0^+} = +\infty$</p> <p>$\xrightarrow{x \rightarrow 3^-} \frac{9}{[0^-]} = \frac{9}{-1} = -9$</p> <p>(حد ندارد)</p>
<p>الف) $\lim_{x \rightarrow 3} [3x] + [-2x] \xrightarrow{x \rightarrow 3^+} 9 - 6 = 3$</p> <p>$\xrightarrow{x \rightarrow 3^-} 8 - 6 = 2$</p> <p>(حد ندارد)</p>	<p>ب) $\lim_{x \rightarrow 4} [-4x] + [2x] \xrightarrow{x \rightarrow 4^+} 23 - 12 = 11$</p> <p>$\xrightarrow{x \rightarrow 4^-} 24 - 13 = 11$</p> <p>(حد ندارد)</p>
<p>الف) $\lim_{x \rightarrow 2} [x^2 - 4x] \xrightarrow{x \rightarrow 2^+} [(1-4)^+] = -3$</p> <p>$\xrightarrow{x \rightarrow 2^-} [(1-4)^-] = -3$</p> <p>(حد ندارد)</p>	<p>ب) $\lim_{x \rightarrow 3} [4x - x^2] \xrightarrow{x \rightarrow 3^+} [9^-] = 8$</p> <p>$\xrightarrow{x \rightarrow 3^-} [9^+] = 8$</p> <p>(حد ندارد)</p>
<p>الف) $\lim_{x \rightarrow 2} \frac{ x-2 }{x^2-3x+2} \xrightarrow{x \rightarrow 2^+} \frac{(x-2)}{(x-2)(x-1)} = \frac{1}{x-1} = \frac{1}{1} = 1$</p> <p>$\xrightarrow{x \rightarrow 2^-} \frac{-(x-2)}{(x-2)(x-1)} = \frac{-1}{x-1} = \frac{-1}{1} = -1$</p> <p>(حد ندارد)</p>	<p>ب) $\lim_{x \rightarrow 1} \frac{x - [x]}{x^2 - 1} \xrightarrow{x \rightarrow 1^+} \frac{(x-1)}{(x-1)(x+1)} = \frac{1}{x+1} = \frac{1}{2}$</p> <p>$\xrightarrow{x \rightarrow 1^-} \frac{x}{x^2-1} = \frac{1}{0^-} = -\infty$</p> <p>(حد ندارد)</p>