

الف) $\lim_{x \rightarrow 2^+} f(x) - 3$ $f(2) - 3 = \Delta$

ب) $\lim_{x \rightarrow 2^-} f(x) - 3$ $f(2) - 3 = \Delta$

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الف) $\lim_{x \rightarrow 2^+} f[x] - 3$ $f[2^+] - 3 = f(2) - 3 = \Delta$

ب) $\lim_{x \rightarrow 2^-} f[x] - 3$
 $f[2^-] - 3$
 $f(1) - 3 = 1$

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الف) $\lim_{x \rightarrow 2^+} [f(x) - 3]$ $[f(2^+) - 3] = [\Delta^+] = \Delta$

ب) $\lim_{x \rightarrow 2^-} [f(x) - 3]$
 $[f(2^-) - 3] = [\Delta^-] = \Delta$

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الف) $[\lim_{x \rightarrow 2^+} f(x) - 3]$ $\lim_{x \rightarrow 2^+} f(x) - 3 = f(2) - 3 = \Delta$

ب) $[\lim_{x \rightarrow 2^-} f(x) - 3]$
 $\lim_{x \rightarrow 2^-} f(x) - 3 = f(2) - 3 = \Delta$
 $[\lim_{x \rightarrow 2^-} f(x) - 3] = [\Delta] = \Delta$

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الف) $\lim_{x \rightarrow 2} \frac{f(x) - 3}{x - 2}$ $\begin{matrix} 2^+ \rightarrow \frac{0}{0^+} = +\infty \\ 2^- \rightarrow \frac{0}{0^-} = -\infty \end{matrix}$ *در ندارد*

ب) $\lim_{x \rightarrow 2} \frac{f(x) - 3}{(x - 2)^2}$ $\begin{matrix} 2^+ \rightarrow \frac{0}{(0^+)^2} = +\infty \\ 2^- \rightarrow \frac{0}{(0^-)^2} = +\infty \end{matrix}$ *در ندارد*

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الف) $\lim_{x \rightarrow 3} \frac{\epsilon x - 3}{\sqrt{x-3}}$ $\xrightarrow{3^+} \frac{9}{0^+} = +\infty$
 $\xrightarrow{3^-} \frac{9}{\sqrt{0^-}} = \infty$ تن

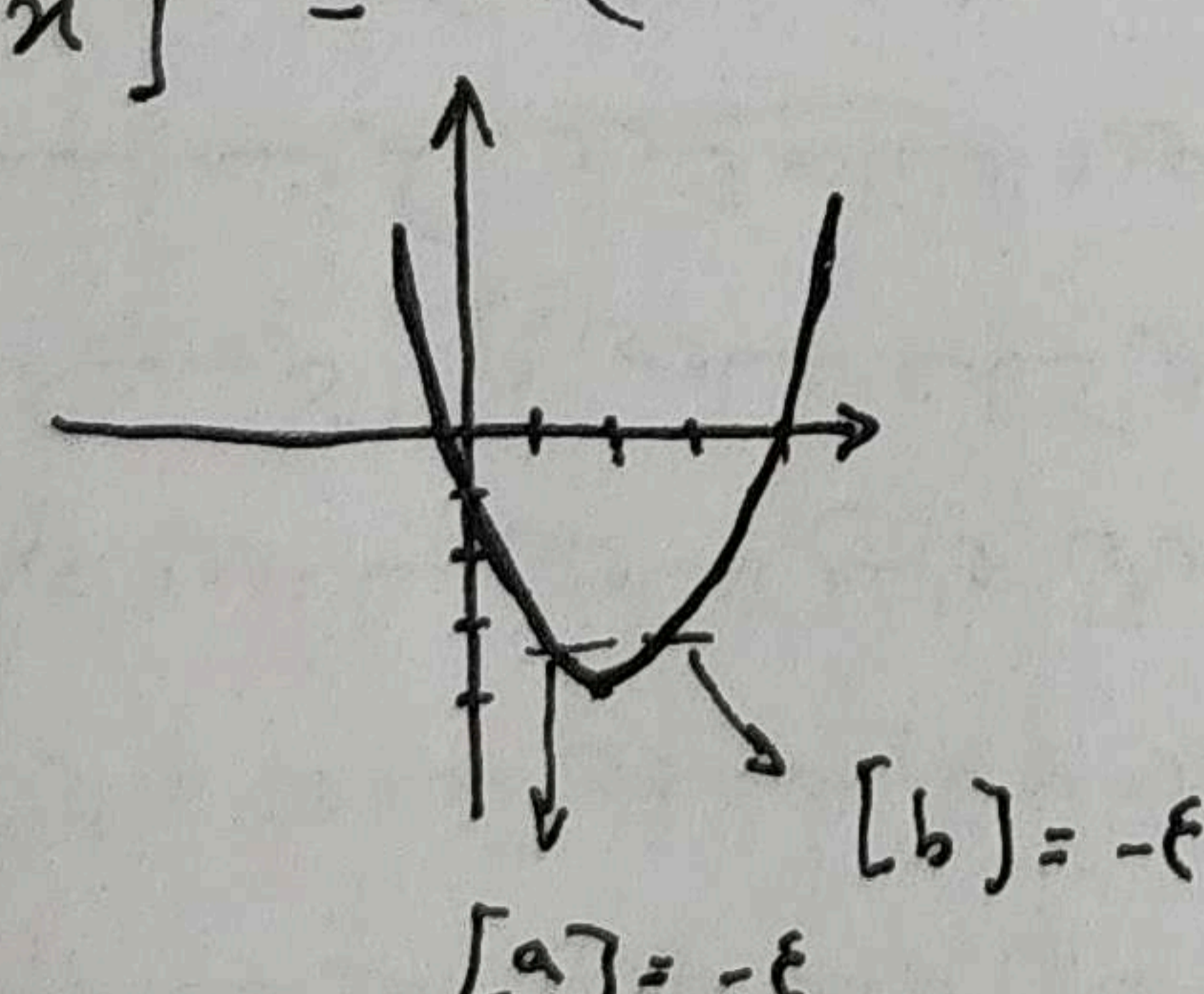
ب) $\lim_{x \rightarrow 3} \frac{\epsilon x - 3}{\sqrt{x^2 - \epsilon x + 3}}$ $\xrightarrow{3^+} \frac{9}{0^+} = +\infty$
 $\xrightarrow{3^-} \frac{9}{\sqrt{0^-}} = \infty$ تن

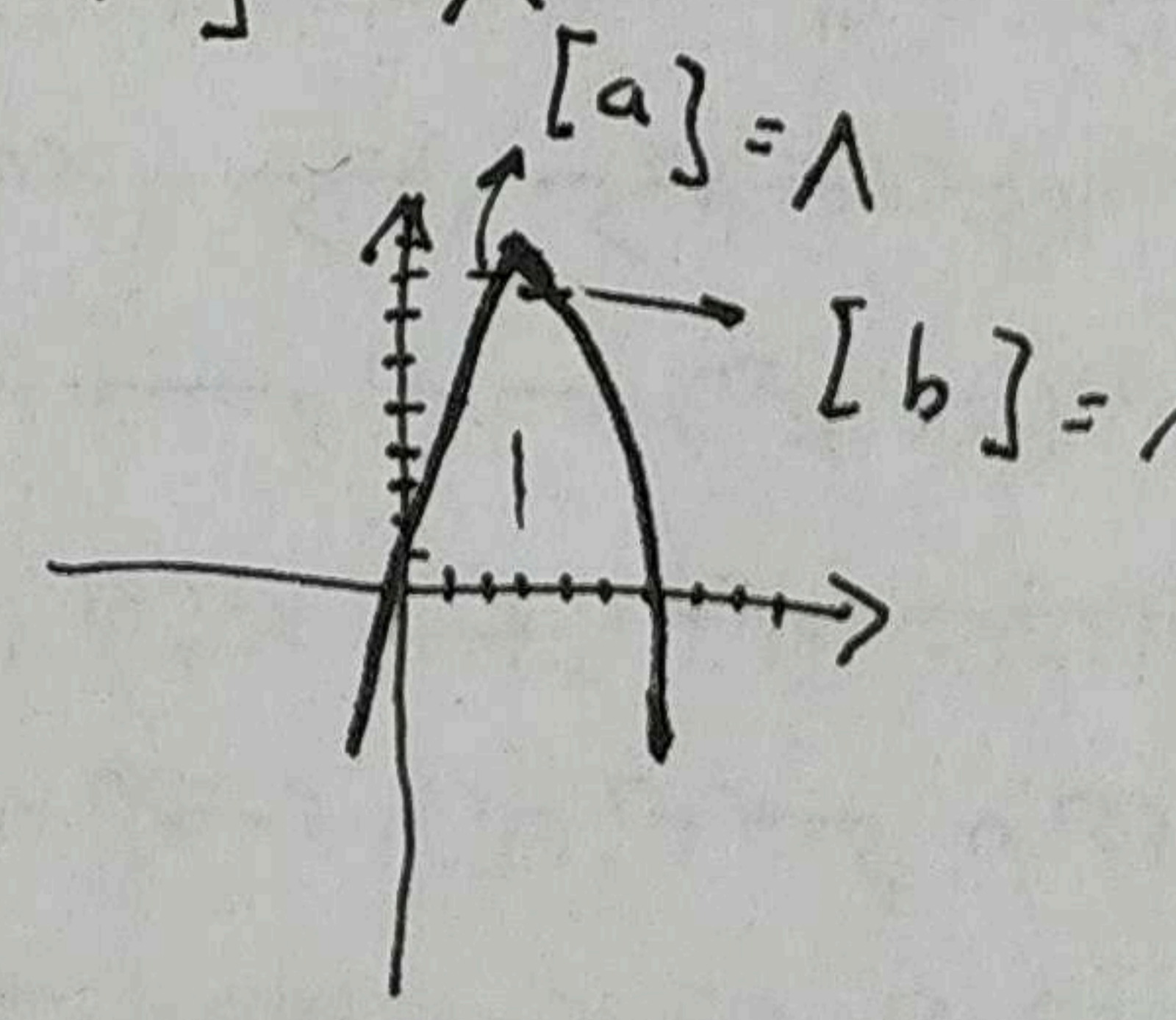
الف) $\lim_{x \rightarrow 3} \frac{\epsilon x - 3}{x^2 - \sqrt{x+1}}$ $\xrightarrow{3^+} \frac{9}{0^-} = -\infty$
 $\xrightarrow{3^-} \frac{9}{0^+} = +\infty$ تن

ب) $\lim_{x \rightarrow 3} \frac{\epsilon x - 3}{[x-3]}$ $\xrightarrow{3^+} \frac{9}{[0^+]} = \frac{9}{0}$ تن
 $\xrightarrow{3^-} \frac{9}{[0^-]} = -9$ تن

الف) $\lim_{x \rightarrow 3} [3x] + [-2x] \xrightarrow{3^+} 9 + (-6) = 3$
 $\xrightarrow{3^-} 8 + (-4) = 4$ دارد

ب) $\lim_{x \rightarrow -4} [-\epsilon x] + [2x] \xrightarrow{-4^+} [23, 4] + [-11, 1] = 23 - 11 = 11$
 $\xrightarrow{-4^-} [24, 4] + [-12, 2] = 24 - 12 = 12$ دارد

الف) $\lim_{x \rightarrow 2} [x^2 - \epsilon x] = -\epsilon$
 $\min = \begin{vmatrix} 2 \\ -\epsilon \end{vmatrix}$

 $[a] = -\epsilon$
 $[b] = -\epsilon$ دارد

ب) $\lim_{x \rightarrow 3} [4x - x^2] = 1$
 $\max = \begin{vmatrix} 3 \\ 9 \end{vmatrix}$

 $[a] = 1$
 $[b] = 1$ دارد

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

ب) $\lim_{x \rightarrow 1} \frac{x - [x]}{x^2 - 1} \xrightarrow{1^+} \frac{x-1}{(x-1)(x+1)} = \frac{1}{x+1}$
 $\xrightarrow{1^-} \frac{x}{(x-1)(x+1)} = \frac{1}{0^-} = -\infty$
 $= \frac{1}{2}$ دارد