

تقریباً $\frac{V}{0} =$ ✓

$$\lim_{n \rightarrow \infty} \frac{n+1}{n+1} = 1 \quad \checkmark$$

$$\lim_{n \rightarrow \infty} \frac{n+6}{n+1} = 1 \quad \checkmark$$

$$\lim_{n \rightarrow \infty} \frac{r^n + \omega}{n+1} = r$$

$$\left[\begin{matrix} \text{input} - r \\ \text{output} \end{matrix} \right] \text{ s/o } \checkmark$$

$$\left[\lim_{n \rightarrow \infty} x_{n-r} \right] \leq 10$$

$$\lim_{n \rightarrow \infty} [10^n] = 9$$

$$\lim_{r \rightarrow r^+} f_x(r) - r = y$$

$$\lim_{n \rightarrow \infty} \left[\frac{n+1}{r} \right] = \infty$$

$$(v) \quad \lim_{r \rightarrow \infty} \frac{r_x(r) + 1}{r} = r - \omega$$

$$\left[\lim_{n \rightarrow r^+} \frac{r_{n+1}}{r} \right] = \omega \quad \checkmark$$

$$(c) \left[\lim_{n \rightarrow \infty} \frac{u_{n+1}}{u_n} \right] = w$$

$\lim_{x \rightarrow 1^-} \frac{x}{x-1} = -\infty$
 $\lim_{x \rightarrow 1^+} \frac{x}{x-1} = +\infty$

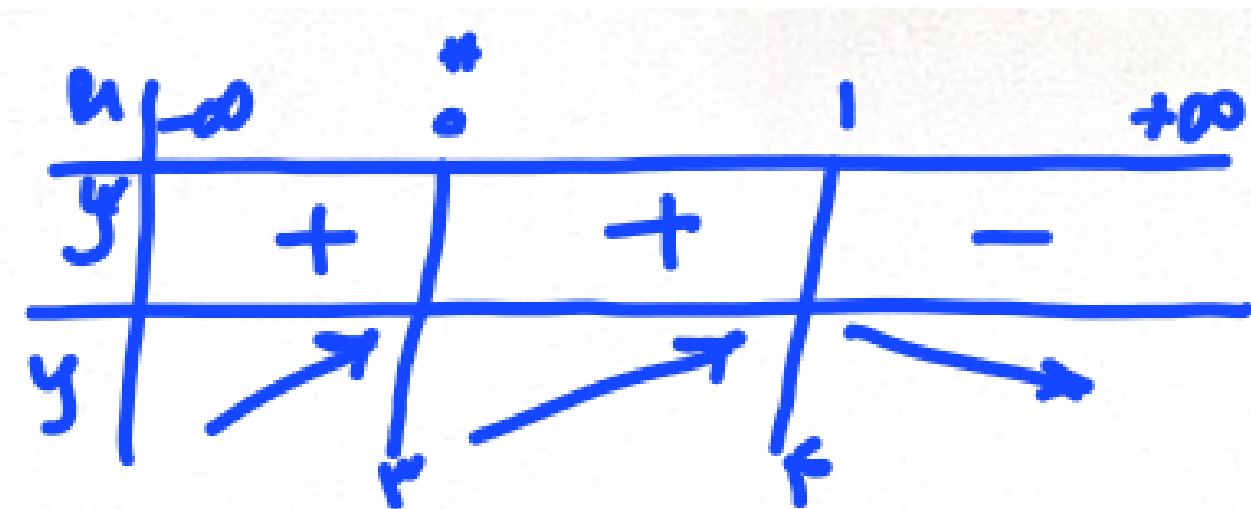
$\lim_{x \rightarrow 1} \frac{x^2 - 1}{x - 1} = \frac{0}{0}$
 $\lim_{x \rightarrow 1^+} \frac{x^2 - 1}{x - 1} = +\infty$
 $\lim_{x \rightarrow 1^-} \frac{x^2 - 1}{x - 1} = -\infty$

$$\lim_{x \rightarrow (-\frac{1}{4})^-} \left[\frac{-1}{x^2} \right] = -14$$

$\lim_{n \rightarrow -\infty} \frac{1}{n} = 0$

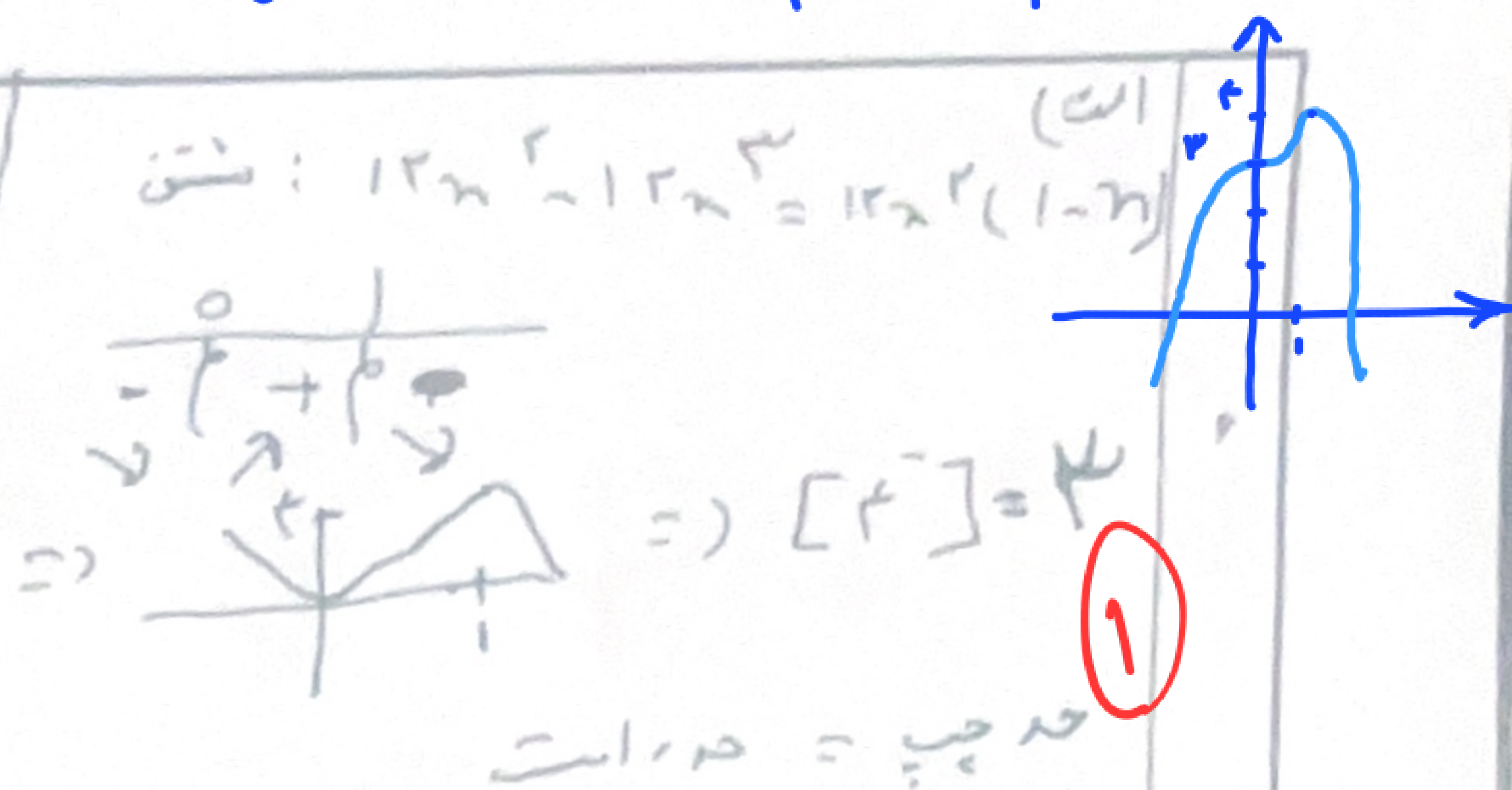
$$2 < -\frac{1}{x} \rightarrow x^{\frac{1}{14}} > \frac{1}{14} \rightarrow -x^{\frac{1}{14}} < \frac{-1}{14} \rightarrow -\frac{1}{x^{\frac{1}{14}}} > -14$$

$$y = \ln x^2 - \ln x^2 + 2 \rightarrow y' = 2\ln x - \ln x^2 \xrightarrow{y'=0} \ln x^2(1-x)=0 \rightarrow \begin{cases} x=0 \\ x=1 \end{cases}$$



ب) $\lim_{x \rightarrow 0} [\ln x^2 - \ln x^2 + 2] = \begin{cases} \lim_{x \rightarrow 0^+} [2] = 2 \\ \lim_{x \rightarrow 0^-} [2] = 2 \end{cases}$

$[2^+] = 2$



ب) $\lim_{x \rightarrow \pi} \frac{-\sin x}{2 \sin x \cos x} = \frac{1}{2}$ ✓

$\frac{\sin x}{2 \sin x \cos x} = -\frac{1}{2}$

الف) $\lim_{x \rightarrow 2} \frac{x^2-1}{x^2-4} = \frac{(x-1)(x+1)}{(x-2)(x+2)} = \frac{3}{0}$ ✓

$\frac{1-x^2}{x^2-4} = \frac{-(x-1)(x+1)}{(x-2)(x+2)} = -\frac{3}{0}$

ب) $\lim_{x \rightarrow 0} \sqrt{x} - \sqrt{2x} = \text{تعریف شده}$

$\sqrt{0^+} - \sqrt{2 \cdot 0^+} = 0$

الف) $\lim_{x \rightarrow \frac{\pi}{2}} \sqrt{0^+} = 0$ ✓

تعریف شده

ب) $\lim_{x \rightarrow 0} \frac{x}{x-1} = \frac{0}{-1} = 0$ (I)

تعریف شده

ب) $\lim_{x \rightarrow 0} \frac{x}{x-1} = \frac{0}{-1} = 0$ (II)

تعریف شده

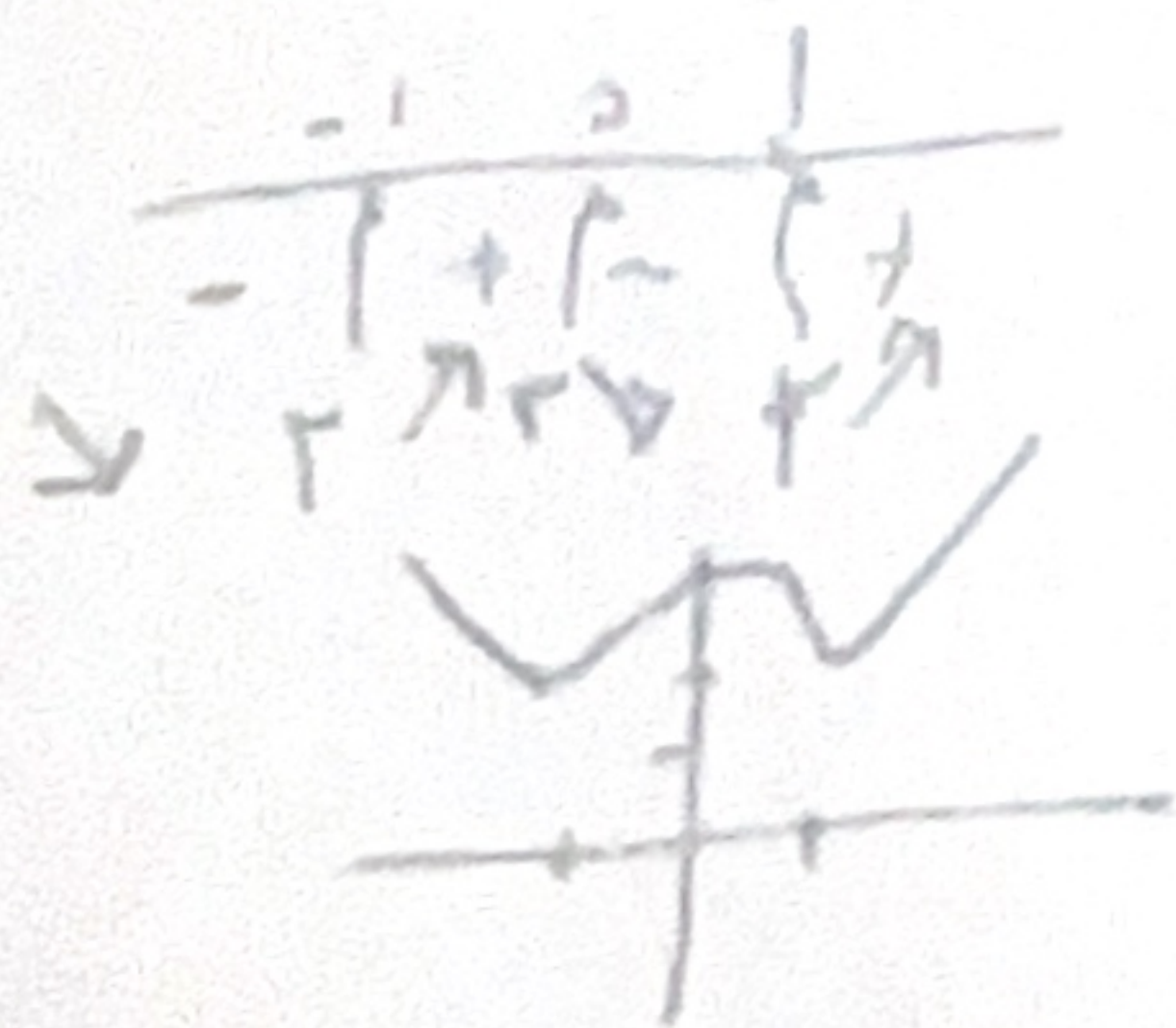
ب) $\lim_{x \rightarrow 2} \frac{x^2-4}{x-2} = x+2 = 4$ ✓

$\frac{x^2-4}{x-1} = 1$

الف) $\frac{(-1)^0}{0^+} = \frac{1}{0} = \infty$ ✓

(2)

ب) $\ln x^2 - \ln x = \ln(x^2-1)$



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