

3) $\lim_{x \rightarrow 1} \frac{x-2}{x^2-4x+5} \rightarrow \frac{1}{5-4+5} = \frac{1}{-4}$ (الف) $\lim_{x \rightarrow 1} \frac{x-2}{x^2-4x+5} = \frac{1}{-4}$ مباين

4) $\lim_{x \rightarrow 1} \frac{x-1}{x^2-4x+4} = \frac{0}{0}$ (ب) $\lim_{x \rightarrow 1} \frac{x-1}{(x-2)^2} = \frac{-1}{0^+} = -\infty$ مباين

5) $\lim_{x \rightarrow -3} \frac{[-3x] - [5x]}{[x] - [14]} = \frac{-9 - 15}{-14 - 14} = \frac{-24}{-28} = \frac{6}{7}$ (الف) $\lim_{x \rightarrow -3} \frac{[-3x] - [5x]}{[x] - [14]} = \frac{-9 - 15}{-14 - 14} = \frac{-24}{-28} = \frac{6}{7}$ مباين

6) $\lim_{x \rightarrow -3} \frac{[-1]}{x^2} = \frac{-1}{9} = -\frac{1}{9}$ (ب) $\lim_{x \rightarrow -3} \frac{[-1]}{x^2} = \frac{-1}{9} = -\frac{1}{9}$ مباين

7) $\lim_{x \rightarrow 1} [4x^3 - 3x^2 + 3] = 4 - 3 + 3 = 4$ (الف) $\lim_{x \rightarrow 1} [4x^3 - 3x^2 + 3] = 4 - 3 + 3 = 4$ مباين

8) $\lim_{x \rightarrow 0} [x^2 - 3x^2 + 3] = 0 - 0 + 3 = 3$ (ب) $\lim_{x \rightarrow 0} [x^2 - 3x^2 + 3] = 0 - 0 + 3 = 3$ مباين

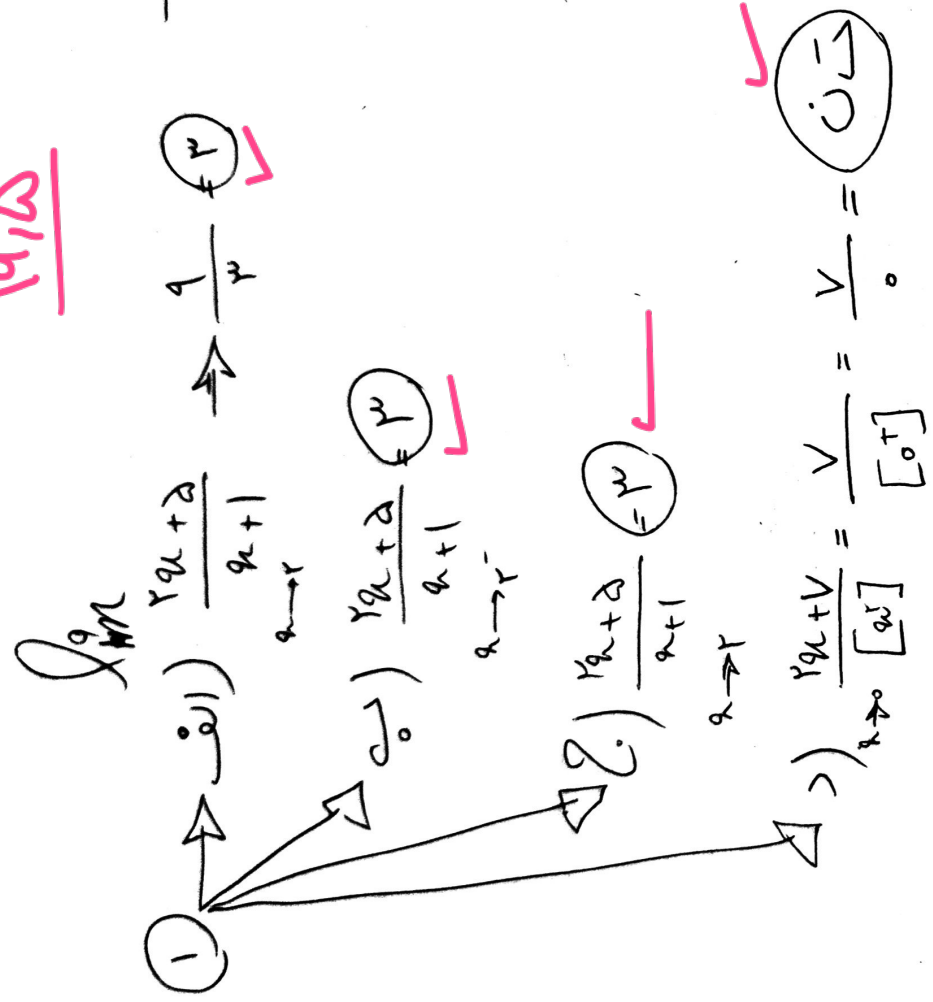
9) $\lim_{x \rightarrow 1} \frac{|x^3 - 1|}{x^2 - 1} = \frac{0}{0}$ (الف) $\lim_{x \rightarrow 1} \frac{|x^3 - 1|}{x^2 - 1} = \frac{0}{0}$ مباين

10) $\lim_{x \rightarrow 1} \frac{|\sin x|}{\sin x} = \frac{0}{0}$ (ب) $\lim_{x \rightarrow 1} \frac{|\sin x|}{\sin x} = \frac{0}{0}$ مباين

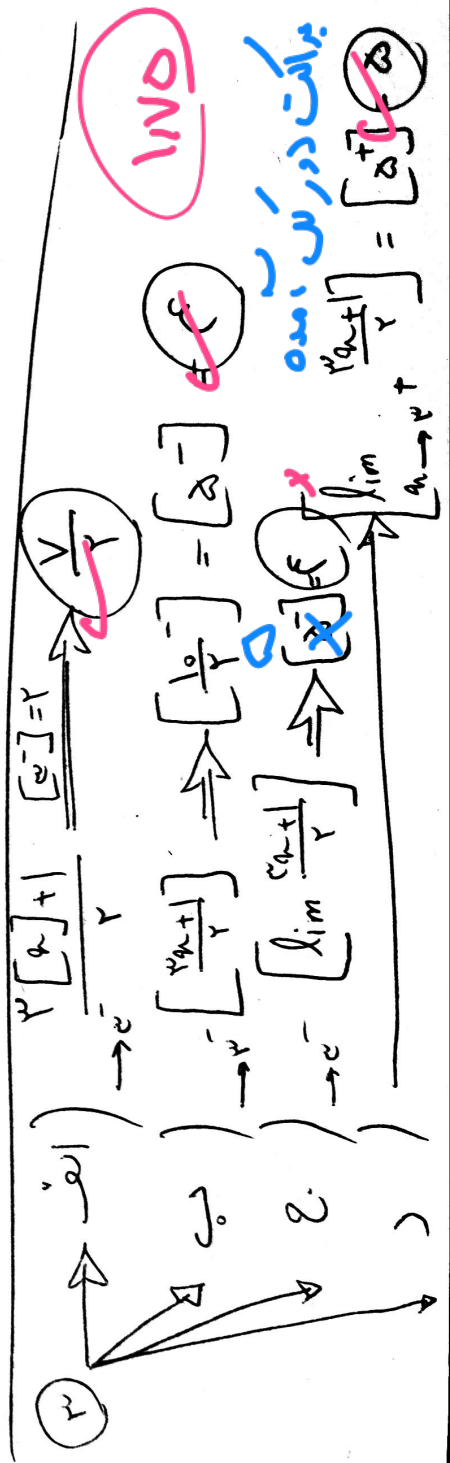
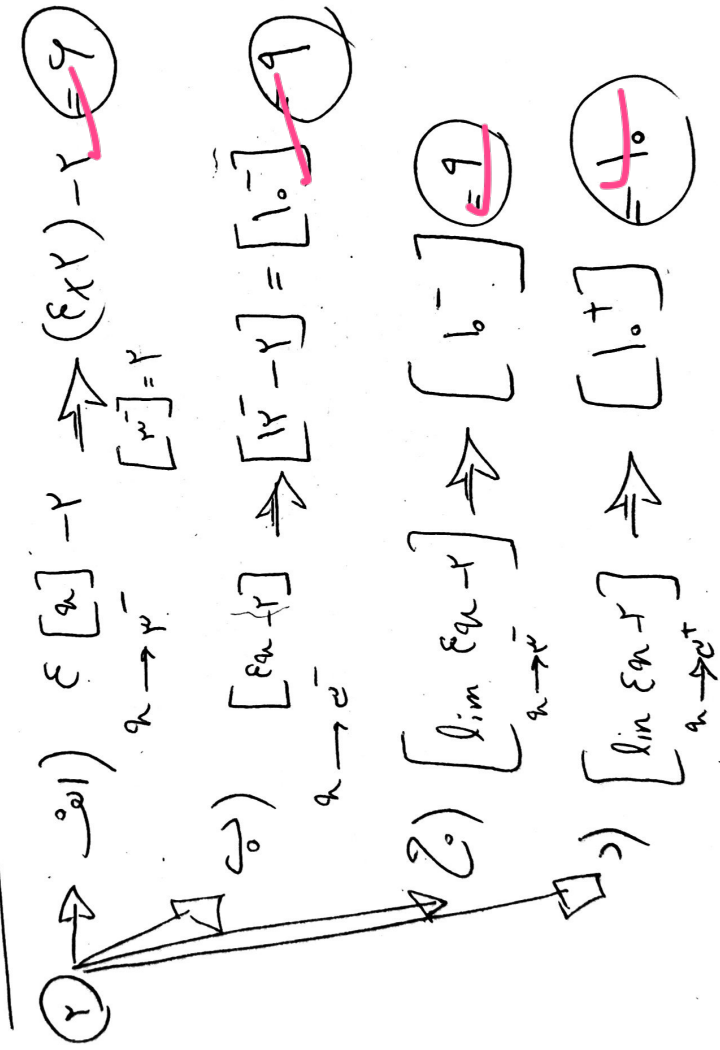
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مسئله ۱۴۱۵

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برای درس آماده

الف 4

$$\lim_{n \rightarrow 1^+} \frac{n-1}{(n-1)(n-1)} = \lim_{n \rightarrow 1^+} \frac{1}{n-1} = \frac{1}{0^+} = +\infty$$

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

الف 5

$$\lim_{n \rightarrow -3} [-3n] - [an] \rightarrow \lim_{n \rightarrow -3^+} [-3n] - [an] = 1 - (-18) = 19$$

$$\hookrightarrow \lim_{n \rightarrow -3^-} [-3n] - [an] = 9 - (-19) = 28$$

الف 5 ب

$$\text{ب) } n < -\frac{1}{4} \rightarrow n^2 > \frac{1}{16} \rightarrow -n^2 < -\frac{1}{16} \rightarrow -\frac{1}{n^2} > -16$$

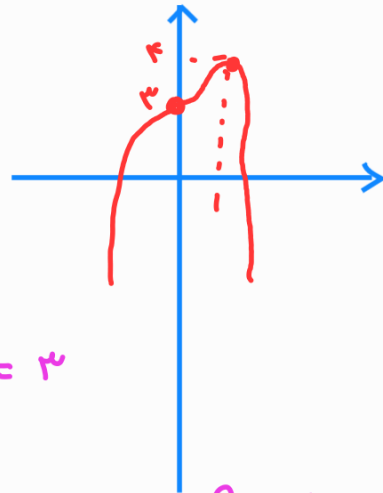
$$\lim_{n \rightarrow -\frac{1}{4}} \left[-\frac{1}{n^2} \right] = -16$$

4-

$$y = [4n^3 - 3n^2 + 3] \rightarrow y' = 12n^2 - 6n \rightarrow y' = 0 \rightarrow 12n^2(1-n) = 0$$

$n < 0, n < 1$

	*		
			1
y'	-	-	+
y	↘	↘	↗



$$\text{الف) } \lim_{n \rightarrow 1} [4n^3 - 3n^2 + 3] = [4] = 4$$

$$\text{ب) } \lim_{n \rightarrow 0} [4n^3 - 3n^2 + 3] = \begin{cases} n > 0 \rightarrow \lim[y] = [4^+] = 4 \\ n < 0 \rightarrow \lim[y] = [4^-] = 4 \end{cases}$$

