

۱۸, ۵

$$\lim_{x \rightarrow r^+} f(x) - r = a \quad \lim_{x \rightarrow r^-} f(x) - r = a \quad (5) \quad (1)$$

$$\lim_{x \rightarrow r^+} f[n] - r = f(r) - r = a \quad \lim_{x \rightarrow r^-} f[n] - r = f(1) - r = 1 \quad (5) \quad (2)$$

$$\lim_{x \rightarrow r^+} [f(x) - r] = \lim_{x \rightarrow r^+} [f(x)] - r = 1 - r = a \quad (5) \quad (3)$$

$$\lim_{x \rightarrow r^-} [f(x) - r] = \lim_{x \rightarrow r^-} [f(x)] - r = 1 - r = a \quad (5) \quad (4)$$

$$[\lim_{x \rightarrow r^+} f(x) - r] = [a] = a \quad [\lim_{x \rightarrow r^-} f(x) - r] = [a] = a \quad (5) \quad (5)$$

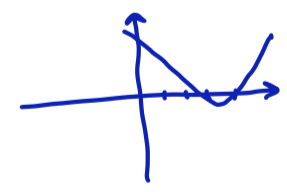
$$\lim_{x \rightarrow r} \frac{f(x) - r}{x - r} \rightarrow x = r \Rightarrow \begin{matrix} \text{صورت عددی غیر صفر} \\ \text{مخرج صفر} \end{matrix} \begin{matrix} x \rightarrow r^- = \frac{9}{0^-} = -\infty \\ x \rightarrow r^+ = \frac{9}{0^+} = +\infty \end{matrix} \quad (5) \quad (6)$$

$$\lim_{x \rightarrow r} \frac{f(x) - r}{(x - r)^2} \rightarrow x = r \Rightarrow \begin{matrix} \text{صورت عددی غیر صفر} \\ \text{مخرج صفر} \end{matrix} \begin{matrix} x \rightarrow r^- = \frac{9}{0^+} = +\infty \\ x \rightarrow r^+ = \frac{9}{0^+} = +\infty \end{matrix} \quad (5) \quad (7)$$

$$\lim_{x \rightarrow r} \frac{f(x) - r}{\sqrt{x - r}} \rightarrow x = r \Rightarrow \begin{matrix} \text{صورت صفر} \\ \text{مخرج صفر} \end{matrix} \begin{matrix} x \rightarrow r^- = \text{ن.ت.} \\ x \rightarrow r^+ = \frac{9}{0^+} = +\infty \end{matrix} \quad (5) \quad (8)$$

$$\lim_{x \rightarrow r} \frac{f(x) - r}{\sqrt{x^2 - x + 1}} \rightarrow x = r \Rightarrow \begin{matrix} \text{صورت صفر} \\ \text{مخرج صفر} \end{matrix} \begin{matrix} x \rightarrow r^- = \text{ن.ت.} \\ x \rightarrow r^+ = \frac{9}{0^+} = +\infty \end{matrix} \quad (5) \quad (9)$$

$$\lim_{x \rightarrow r} \frac{f(x) - r}{x^2 - \sqrt{x + 1}} \rightarrow x \rightarrow r^- = \frac{9}{0^+} = +\infty \quad x \rightarrow r^+ = \frac{9}{0^-} = -\infty \quad (5) \quad (10)$$



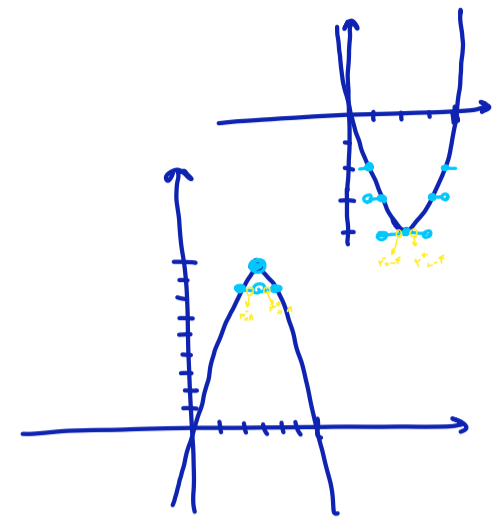
$$\lim_{x \rightarrow r} \frac{f(x) - r}{[x - r]} \rightarrow x \rightarrow r^- = \frac{9}{-1} = -9 \quad x \rightarrow r^+ = \frac{9}{0} = \text{ن.ت.} \quad (5) \quad (11)$$

$$\lim_{x \rightarrow r} [f(x)] + [-r] \rightarrow x \rightarrow r^+ = 9 - 7 = 2 \quad x \rightarrow r^- = 1 - 9 = -8 \quad (5) \quad (12)$$

$$\lim_{x \rightarrow -c} [-f(x)] + [g(x)] \begin{cases} \rightarrow x \rightarrow -c^- = cf - 1x = 1x \\ \rightarrow x \rightarrow -c^+ = cf - 1x = 1x \end{cases} \quad \text{(دليله)}$$

$$\lim_{x \rightarrow r} [x^r - f(x)] \begin{cases} \rightarrow x \rightarrow r^- = -f \\ \rightarrow x \rightarrow r^+ = -f \end{cases} \quad \text{(دليله)}$$

$$\lim_{x \rightarrow r} [4x - x^r] \begin{cases} \rightarrow x \rightarrow r^- = 1 \\ \rightarrow x \rightarrow r^+ = 1 \end{cases} \quad \text{(دليله)}$$



9

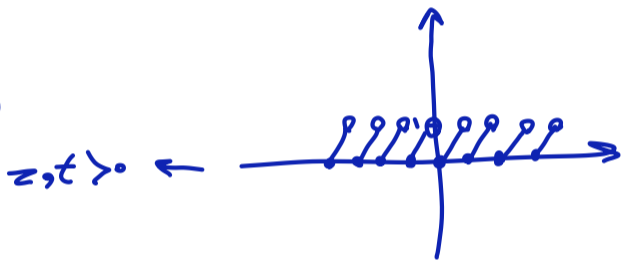
5

$$\lim_{x \rightarrow r} \frac{|x-r|}{x^r - x + r} \begin{cases} \rightarrow x \rightarrow r^- = \frac{(r-x)}{(x-1)(x-r)} = \frac{-1}{x-1} = -1 \\ \rightarrow x \rightarrow r^+ = \frac{(x-r)}{(x-1)(x-r)} = \frac{1}{x-1} = 1 \end{cases} \quad \text{(دليله)}$$

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$$\lim_{x \rightarrow 1} \frac{x - [x]}{x^r - 1} \begin{cases} \rightarrow x \rightarrow 1^- = \frac{x}{0^-} = -\infty \\ \rightarrow x \rightarrow 1^+ = \frac{x}{0^+} = +\infty \end{cases} \quad \text{(دليله)}$$

$$\frac{(x-1)}{(x+1)(x-1)} = \frac{1}{x}$$



1