

$\lim_{n \rightarrow -1} \frac{\sqrt[3]{n+2} - \sqrt[3]{n+1}}{1 + \sqrt[3]{n}} = \frac{1-1}{1+(-1)} = \frac{0}{0} \rightarrow \text{مربع در صورت و مربع در مخرج}$ $\text{Hop: } \frac{2}{2\sqrt[3]{n+2}} - \frac{1}{2\sqrt[3]{n+1}} \Rightarrow \frac{2}{2} - \frac{1}{2} = \frac{1}{2} \Rightarrow \frac{-1}{2} = -\frac{1}{2}$	6
$\lim_{n \rightarrow 1} \frac{2n - \sqrt{n} + a}{2n - \sqrt{n+1}} = \frac{2-1+a}{2-1} = \frac{0}{0} \rightarrow \text{مربع در صورت و مربع در مخرج}$ $\text{Hop: } \frac{2 - \frac{1}{2\sqrt{n}} + 0}{2 - \frac{1}{2\sqrt{n+1}}} = \frac{2 - \frac{1}{2}}{2 - \frac{1}{2}} = \frac{\frac{3}{2}}{\frac{3}{2}} = 1$	7
$\lim_{n \rightarrow 0} \frac{a + \sqrt{bn+c}}{n} = \frac{1}{2}$ $\text{Hop: } \frac{0 + \frac{b}{2\sqrt{bn+c}}}{\frac{1}{2}} = \frac{b}{2\sqrt{c}} = \frac{1}{2} \Rightarrow \frac{b}{\sqrt{c}} = 1 \Rightarrow b = \frac{a^2}{c}$	8
$\lim_{n \rightarrow -\pi} \frac{\varepsilon + K \left[\frac{n}{\pi} \right]}{\sin n} = +\infty$ $\begin{aligned} n \rightarrow (-\pi)^+ & \Rightarrow \frac{\varepsilon + K \left[\frac{-\pi^+}{\pi} \right]}{\sin(-\pi)^+} = \frac{\varepsilon - K}{0^+} = +\infty \rightarrow \varepsilon - K > 0 \rightarrow K < \varepsilon \\ n \rightarrow (-\pi)^- & \Rightarrow \frac{\varepsilon + K \left[\frac{-\pi^-}{\pi} \right]}{\sin(-\pi)^-} = \frac{\varepsilon - K}{0^-} = +\infty \rightarrow \varepsilon - K < 0 \rightarrow K > \varepsilon \end{aligned}$	9
$\lim_{n \rightarrow \infty} \frac{b\sqrt{n+1} - \sqrt{n}}{an - b} \xrightarrow{\frac{\infty}{\infty}} \frac{b\sqrt{n+1} + \sqrt{n}}{an - b} = \frac{b^2 + b^2}{\infty} = 0$ $\rightarrow \frac{1}{2} \cdot \frac{1}{n} = \frac{1}{2n} = \frac{1}{2} \cdot \frac{1}{n} = \frac{1}{2}$	10

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$$1a - b = 0 \rightarrow b = 1a$$

$$\lim_{x \rightarrow 1} \frac{1a(\sqrt{1+\sqrt{x}} - 1)}{ax - 1a} = \frac{1a(\sqrt{1+\sqrt{x}} - 1)}{ax - 1a} \times \frac{\sqrt{1+\sqrt{x}} + 1}{\sqrt{1+\sqrt{x}} + 1} =$$

$$\lim_{x \rightarrow 1} \frac{1a(\sqrt{x} - 1)}{a(x-1) \times 1} \rightarrow \lim_{x \rightarrow 1} \frac{1(\sqrt{x} - 1)}{(\sqrt{x} - 1)(\sqrt{x} + 1)} = \frac{1}{1+1} = \frac{1}{2}$$