

صورت مرتب (۱) - ات و منحصر منزه می شود و حد اول 2^2 و 2^2 - حد
 پس $(n-2)$ رشت میماند منحصر می شود

$$(n-2)^2 = n^2 - 4n + 4$$

$$a = -4 \quad b = 4 \quad a + b = 0$$

صورت مرتب (۲) - در لیم $\sqrt[3]{n^3 - 27n^2 + 27n - 14}$ به $(n-2)^2$ رشت میماند

$$n^3 - 27n^2 + 27n - 14$$

$$\left(\frac{\sqrt[3]{14}}{\sqrt[3]{n^3}} \right) = \left(-\frac{1}{\sqrt[3]{n^3}} \right) = \left(-\frac{1}{n} \right)$$

$$\lim_{n \rightarrow \frac{1}{4}} \frac{a}{\frac{1}{n} + a} = -\infty$$

$$-\frac{1}{4} - 1 = -\frac{5}{4}$$

$$[a] = -1$$

$$\frac{1}{n} + a > 0$$

$$\frac{1}{n} + 2a = 0$$

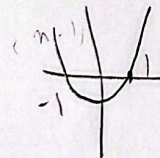
$$2a = -\frac{1}{n} \quad a = -\frac{1}{2n}$$

$$\lim_{n \rightarrow \infty} \frac{14n + 9}{2n^2 - 12} =$$

$$\frac{\infty}{\infty} = \frac{14}{2} = 7$$

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

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

$\lim_{n \rightarrow \infty} \frac{n^{1/2} + 1}{n^{1/2} + 4\sqrt{n}} = \frac{0}{0} \quad \text{L'Hôpital} = \frac{2n+1}{2\sqrt{n}}$ $\lim_{n \rightarrow \infty} (n+1) \left(\frac{1}{\sqrt{n}} \right) = \infty - \infty = -1 \quad \text{(circled)}$	6
$\lim_{n \rightarrow \infty} \frac{\sqrt{1+n} - \sqrt{1-n}}{\sqrt{1-\cos n}} =$ $\frac{\frac{1}{2\sqrt{1+n}} + \frac{1}{2\sqrt{1-n}}}{\frac{1}{2\sqrt{1-\cos n}}} = \frac{\frac{1}{\sqrt{1+n}} + \frac{1}{\sqrt{1-n}}}{\frac{1}{\sqrt{1-\cos n}}}$ $\frac{1}{\sqrt{1-n}} = \sqrt{1-n} \quad \text{(circled)}$	7
در تابع مترادف و حد در $x=0$ داریم: $\lim_{x \rightarrow 0} (1 + \cos(x)) = 2$ $\lim_{n \rightarrow \infty} \frac{-1 + \cos(an)}{-n^2} = \frac{0}{0}$ $\frac{-\frac{1}{2} \sin(an)}{-2an} = \frac{\sin(an)}{4an} = \frac{1}{4} \lim_{n \rightarrow \infty} \frac{\sin(an)}{an} = \frac{1}{4}$ $\frac{a}{n} = 4$ (circled) $a = -4$ (circled)	8
$\frac{\frac{1}{\sqrt{n-n}} + \frac{1}{\sqrt{n}}}{\frac{1}{\sqrt{n-n^2}}}$ $\frac{\frac{1}{\sqrt{n}} + \frac{1}{\sqrt{n-n}}}{\frac{1}{\sqrt{n-n^2}}} = \frac{\frac{1}{\sqrt{n}} + \frac{1}{\sqrt{n-n}}}{\frac{1}{\sqrt{n-n^2}}}$ $\frac{1}{\sqrt{n-n^2}} = \frac{1}{\sqrt{n(1-n)}} = \frac{1}{\sqrt{n}} \cdot \frac{1}{\sqrt{1-n}}$	9
 $\lim_{n \rightarrow -1^+} \frac{1 - n^2}{n^2 - 1} = \frac{0}{0} = -\infty$ $\lim_{n \rightarrow -1^+} \frac{1 + n}{n^2 - 1} = \frac{0}{0} = -\infty$ $1 + n < 0$ (circled) $n < -1$ (circled) $1 < n < -1$ (circled) $\lim_{n \rightarrow -1^+} \frac{1 - n^2}{n^2 - 1} = -\infty$ (circled)	10