

①  $\lim_{n \rightarrow 1} \frac{fn^2 - vn + \mu}{an^2 - nu + r} = \frac{0}{0}$   $\rightarrow \frac{(f-n)(n-1)}{(a-n)(an-n)} \xrightarrow{n=1} \frac{1}{r}$

⑤  $\begin{cases} fn^2 - vn + \mu \rightarrow n^2 - vn + r \\ (n-n)(n-1) \rightarrow (fn-n)(n-1) \\ an^2 - nu + r \rightarrow n^2 - nu + r \\ (n-n)(n-1) \rightarrow (an-n)(n-1) \end{cases}$

②  $\lim_{n \rightarrow 0} \frac{|n-1| - |n+1|}{n} \xrightarrow{0} \frac{-n+1 - n-1}{n} \rightarrow -2$

③  $\lim_{n \rightarrow r} \frac{n-r}{\sqrt{a-r}}$   $\rightarrow \frac{(\sqrt{a-r})(\sqrt{a+r})}{\sqrt{a+r}} \Rightarrow \frac{1}{\sqrt{a+r}}$

④  $\lim_{n \rightarrow r} \frac{n - \sqrt{rn}}{rn^2 - a - r} \rightarrow \frac{n - \sqrt{rn}}{(n-r)(rn+r)} \rightarrow \frac{\sqrt{r}(\sqrt{a-r})}{(\sqrt{a+r})(rn+r)} \rightarrow \frac{\sqrt{r}}{\sqrt{a+r} \sqrt{r} \sqrt{a+r}} \rightarrow \frac{1}{r\sqrt{a+r}}$

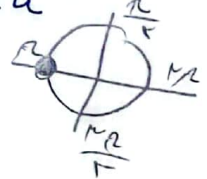
⑤  $\lim_{x \rightarrow 1} \frac{1 - \sqrt{x}}{r - \sqrt{a-x}} \times \frac{1 + \sqrt{x}}{1 + \sqrt{x}} \times \frac{r + \sqrt{a-x}}{r + \sqrt{a-x}} \rightarrow \frac{(1-x)r}{r(-1+x)}$

$r = \sqrt{a-x} \Rightarrow r - \sqrt{a-x} = 0$  چنانچه  $r$  برابر  $1 + \sqrt{x} \Rightarrow 1 - \sqrt{x} = 0$  و  $\frac{0}{0}$  و  $\frac{0}{0}$

⑥  $\lim_{n \rightarrow r} \frac{\sqrt{an+r} - r}{\sqrt{an+r} - r} \times \frac{\sqrt{an+r} + r}{\sqrt{an+r} + r} \times \frac{\sqrt{an+r} + r}{\sqrt{an+r} + r} \rightarrow \frac{r(a-r)}{(an+r)(a-r)}$

⑦  $\lim_{n \rightarrow 1} \frac{\sqrt{an+rn} - r}{\sqrt{x} - 1} \times \frac{\sqrt{an+rn} + r}{\sqrt{an+rn} + r} \times \frac{\sqrt{an+r} + r}{\sqrt{an+r} + r} \rightarrow \frac{an+rn-r}{n-1} \times \frac{r}{r}$

①  $\lim_{u \rightarrow \pi} \frac{1 + \cosh u}{\sinh u} \rightarrow \frac{1 + \cosh \pi}{\sinh \pi} \rightarrow \frac{(1 + \cos)(1 + \cos^2 - \cos)}{(1 - \cos)(1 + \cos)} \rightarrow \frac{1 + 1 + 1}{1} \rightarrow \frac{3}{1}$



②  $\lim_{u \rightarrow \frac{\pi}{2}} \frac{1 - \tanh u}{\sinh u - \cosh u} \rightarrow \frac{1 - \frac{\sin}{\cos}}{\sin - \cos} \rightarrow \frac{\cos - \sin}{\sin - \cos} \cdot (-1) \rightarrow \frac{-1}{\cos \pi} \rightarrow -1$

③  $\lim_{u \rightarrow \frac{\pi}{2}} \frac{\tanh^2 u - 1}{\cosh^2 u} \rightarrow \frac{\sinh^2 u - \cosh^2 u}{\cosh^2 u} \rightarrow \frac{-1(\sinh - \cosh)(\sinh + \cosh)}{(\cosh - \sinh)(\cosh + \sinh)} \rightarrow \frac{-1}{\cosh^2 \frac{\pi}{2}} \rightarrow -1$