

$$1) \lim_{x \rightarrow 1} \frac{rx^r - vx + r}{ax^r - \lambda x + r} = \frac{\lambda x - v}{1 \cdot x - \lambda} = \frac{\lambda - v}{1 - \lambda} = \left[\frac{1}{r} \right]$$

$$2) \lim_{x \rightarrow -\infty} \frac{|rx-1| - |rx+1|}{x} \begin{matrix} \xrightarrow{+} \\ \xrightarrow{-} \end{matrix} \begin{matrix} rx-1 - rx-1 \\ 1 - rx - rx - 1 \end{matrix} = \begin{matrix} -\frac{r}{x} = -\infty \\ \frac{-4x}{x} = -4 \end{matrix}$$

$$3) \lim_{x \rightarrow r} \frac{x - \varepsilon}{\sqrt{x} - r} = \frac{1}{\frac{1}{r\sqrt{x}}} = \frac{1}{\frac{1}{\varepsilon}} = \varepsilon$$

$$4) \lim_{x \rightarrow r} \frac{x - \sqrt{rx}}{rx^r - x - r} = \frac{1 - \frac{r}{\sqrt{rx}}}{rx - 1} = \frac{1 - \frac{r}{\varepsilon}}{\lambda - 1} = \left[\frac{r}{\lambda} \right] = \frac{1}{\varepsilon}$$

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

$$6) \lim_{x \rightarrow \varepsilon} \frac{\sqrt{rx+\varepsilon} - \varepsilon}{\sqrt{ax+v} - r} = \frac{\frac{r}{\sqrt{rx+\varepsilon}}}{\frac{\Delta}{r\sqrt{(\Delta x+v)r}}} = \frac{\lambda}{\varepsilon} = r \cdot \Delta$$

$$7) \lim_{x \rightarrow 1} \frac{\sqrt{rx+\sqrt{x}} - r}{\sqrt{x} - 1} = \frac{r + \frac{1}{r\sqrt{x}}}{\frac{r\sqrt{rx+\sqrt{x}}}{\frac{1}{r\sqrt{x}}}} = \frac{r}{\lambda}$$

$$8) \lim_{n \rightarrow \pi} \frac{1 + \cos^n n}{\sin^n n} = \frac{(1 + \cos n)(1 - \cos n + \cos^n n)}{(1 - \cos n)(1 + \cos n)} = \frac{1 - \cos \pi + \cos^n \pi}{1 - \cos \pi} = \frac{2}{2} = 1$$

$$9) \lim_{n \rightarrow \frac{\pi}{2}} \frac{1 - \tan n}{\sin n - \cos n} = \frac{\cancel{\cos n} - \sin n}{\cos n} = \frac{-1}{\cos n} = \frac{-1}{\sqrt{r}} = -\frac{1}{\sqrt{r}}$$

$$\left(\frac{\sqrt{r}}{r}\right)^r - \left(\frac{\sqrt{r}}{r}\right)^r$$

$$\frac{r}{r} - \frac{r}{r}$$

$$-(\cos^n n - \sin^n n)$$

$$10) \lim_{n \rightarrow \frac{\pi}{2}} \frac{\tan^n n - 1}{\cos^n n} = \frac{\sin^n n - \cos^n n}{\cos n} = \frac{\sin^n n - \cos^n n}{\cos^n n - \sin^n n} = \frac{-1}{\frac{\cos n}{\sqrt{r}}} = -\frac{r}{\sqrt{r}}$$

$$\frac{-r}{\sqrt{r}} \times \frac{\sqrt{r}}{\sqrt{r}} = -\sqrt{r}$$