

سازگار

۱۷/۷۵

$$x^r + ax + b = (x-r)^r \quad \Leftarrow \quad \frac{-1}{0^+} \quad \text{باید صورت} \quad (1)$$

$$\Rightarrow a = -r \quad b = r \quad \Rightarrow a+b=0 \quad \checkmark$$

$$x^r + ax + b = (x - \sqrt[r]{r})^r \quad \Leftarrow \quad \frac{r\sqrt[r]{r}}{0^+} \quad \text{باید صورت} \quad (2)$$

$$\Rightarrow x^r + ax + b = x^r + \sqrt[r]{r} - r\sqrt[r]{r}x \quad \Rightarrow \quad \begin{cases} a = -r\sqrt[r]{r} \\ b = \sqrt[r]{r} \end{cases} \quad \left[\frac{b}{a} \right] = \left[\frac{\sqrt[r]{r}}{r} \right]$$

-1

~~$x^r + ax + b = (x-r)^r$~~

$$\left| \frac{1}{r} + a \right| + a = 0 \quad \Rightarrow \quad \begin{cases} ra = -\frac{1}{r} \Rightarrow a = -\frac{1}{r} \\ -\frac{1}{r} = a \end{cases} \quad \Rightarrow \quad [a] = -1 \quad \checkmark$$

~~$x^r + ax + b = (x-r)^r$~~

$$x > -\frac{1}{r} \Rightarrow \frac{1}{x} < -r \Rightarrow \frac{1}{x^r} > r \Rightarrow \frac{-r}{x^r} < -1 \Rightarrow \left[\frac{-r}{x^r} \right] = -1$$

$$x > -\frac{1}{r} \Rightarrow \frac{1}{x} < -r \Rightarrow \frac{1}{x^r} > r \Rightarrow \frac{r}{x^r} > 1r \Rightarrow \left[\frac{r}{x^r} \right] = 1r$$

$$\lim_{x \rightarrow (-\frac{1}{r})^+} \frac{-1 + 1}{-1r + 1r} = +\infty$$

$\lim_{x \rightarrow -1r} \frac{-1r}{-1r} = 1$

$$x > r \Rightarrow x^r > r \Rightarrow [x^r] = r$$

$$\lim_{x \rightarrow r^+} \frac{x+r}{x^r+r+m} = \frac{r}{1r} = \frac{1}{r}$$

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

$$\frac{(x+r)(x+1)}{4(1+\sqrt{x})} \Rightarrow \lim_{x \rightarrow -1} \frac{(x+r)(\sqrt{x} + r\sqrt{x} + r\sqrt{x})}{4} = -1r$$

$$\begin{aligned}
 & \lim_{x \rightarrow 0} \frac{\sqrt{r+x} - \sqrt{r-x}}{\sqrt{1-ax}} \times \frac{\sqrt{r+x} + \sqrt{r-x}}{\sqrt{1+ax}} \times \frac{\sqrt{1+ax}}{\sqrt{r+x} + \sqrt{r-x}} \quad \textcircled{V} \\
 & = \frac{r+x - r+x}{\cancel{r+x} \times \cancel{r-x} \times \sqrt{1-ax}} \times \frac{r}{r\sqrt{r}} = \frac{\sqrt{r}}{r} \times \frac{rx}{r \sin x} = \frac{\sqrt{r}}{r} \times -r = -\sqrt{r}
 \end{aligned}$$

(1, 1, 0)

$$\begin{aligned}
 & k+1=0 \Rightarrow k=-1 \quad \lim_{x \rightarrow 0} \frac{-1 + \cos(\sqrt{a}x)}{-x^r} = \frac{-r \sin^r(\frac{\sqrt{a}}{r}x)}{-x^r} \quad \textcircled{1} \\
 & = r \times \frac{\sqrt{a}}{r} \times \frac{\sqrt{a}}{r} = r \Rightarrow \frac{a}{r} = \frac{r}{r} \\
 & \Rightarrow a = r
 \end{aligned}$$

$$\frac{a}{r} = \frac{r}{-1} = -r$$

$$x^r - 1 = 0 \Rightarrow \frac{-1}{+} \frac{1}{-} +$$

$$k\pi \xrightarrow{-1 < k < -\frac{1}{r}} -\pi < k\pi < -\frac{\pi}{r}$$

$$\downarrow$$

$$-1 < k < -\frac{1}{r}$$

عرض ناقص ← منفی
 طول ناقص ← منفی

$$\lim_{x \rightarrow (-1)^+} \frac{1 - k(x)^r}{\underbrace{x^r - 1}_{0^-}} = -\infty$$

(1)

~~ممنوع~~

$$1 + k > 0 \Rightarrow k > -1$$

(2)

$$\lim_{x \rightarrow (-1)^-} \frac{1 - k(x)^r}{\underbrace{x^r - 1}_{0^+}} = -\infty \quad | 1 + k < 0 \Rightarrow k < -\frac{1}{r}$$

$$| -1 < k < -\frac{1}{r} |$$

$$\lim_{n \rightarrow 0} \frac{\sqrt{r+r_n} - \sqrt{r-n}}{\sqrt{1-\cos n}} \times \frac{\sqrt{r+r_n} + \sqrt{r-n}}{\sqrt{r+r_n} + \sqrt{r-n}} \times \frac{\sqrt{1+\cos n}}{\sqrt{1+\cos n}} =$$

V

$$\lim_{n \rightarrow 0} \frac{r_n \times \sqrt{r}}{\sqrt{1-\cos n}} \times \frac{1}{r\sqrt{r}} = \lim_{n \rightarrow 0} \frac{r\sqrt{r} n}{|\sin n| r\sqrt{r}} = r \times \frac{n}{-\sin n} = \boxed{-r}$$



$$\lim_{n \rightarrow r_a^+} \frac{r\sqrt{n-r_a}}{\sqrt{n-r_a} \sqrt{n+r_a}} + \frac{r(\sqrt{n}-\sqrt{r_a})}{\sqrt{n-r_a} \sqrt{n+r_a}} = \lim_{n \rightarrow r_a^+} \frac{r}{\sqrt{4a}} + \frac{r(\sqrt{n}-\sqrt{r_a})}{\sqrt{n-r_a} \sqrt{n+r_a}} \times \frac{\sqrt{n}+\sqrt{r_a}}{\sqrt{n}+\sqrt{r_a}}$$

$$\lim_{n \rightarrow r_a^+} \frac{r}{\sqrt{4a}} + \frac{r(\sqrt{n}-\sqrt{r_a})}{\sqrt{n-r_a} \sqrt{n+r_a} (\sqrt{n}+\sqrt{r_a})} = \lim_{n \rightarrow r_a^+} \left(\frac{r}{\sqrt{4a}} + \frac{r\sqrt{n-r_a}}{\sqrt{n-r_a} (\sqrt{n}+\sqrt{r_a})} \right) = \lim_{n \rightarrow r_a^+} \frac{r}{\sqrt{4a}} + \dots \rightsquigarrow \frac{r}{\sqrt{4a}} = \sqrt{\frac{r}{4a}} = \sqrt{\frac{r}{r_a}}$$

9