

$$f(x) = \begin{cases} \frac{\sqrt{4x^2 + (m+3)x + \frac{m}{4}}}{|2x^2 + (m-3)x + a|} \rightarrow 4(x + \frac{1}{4})^2 & x \neq a \rightarrow \text{ریشہ} \\ \frac{r \tan b}{\sqrt{-x}} & \text{مخرج وزیر راسخاں} \end{cases}$$

صورت $\Delta = 0 \rightarrow (m+3)^2 - 4m = 0$
 $m^2 - 4m + 9 = 0 \rightarrow \boxed{m=3}$

مخرج $x=a \rightarrow a < 0$
 $\left. \begin{aligned} 2x^2 + (m-3)x + a &= 0 \\ 2a^2 + a &= 0 \end{aligned} \right\} \rightarrow \boxed{a = -\frac{1}{2}}$

$$\lim_{x \rightarrow -\frac{1}{2}} \frac{\sqrt{4(x + \frac{1}{4})^2}}{|2x^2 + \frac{1}{2}|} = \frac{\sqrt{4}}{2|\frac{1}{4} + \frac{1}{4} + \frac{1}{4}|} = \frac{2\sqrt{4}}{\frac{3}{2}}$$

$$\frac{2\sqrt{4}}{\frac{3}{2}} = \frac{4\sqrt{4}}{3}$$

$x=a \rightarrow \frac{r \tan b}{\sqrt{-a}} = \frac{4\sqrt{4}}{3} \rightarrow \tan b = \frac{\sqrt{3}}{3} \rightarrow b = \frac{\pi}{4} \checkmark$
 $0 < b < \pi$

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$$\omega x^2 - ax + b = 0$$

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یابی از ریشه ها $\rightarrow x=1$

$$\omega - a + b = 0 \rightarrow a - b = \omega$$

$$f(x) = \frac{x^2 + ax + b}{x - 1} \rightarrow a + b = -1$$

یابی از ریشه ها

$\rightarrow x=1$

$x=1$ در توان پیوسته نباشد

$$\begin{cases} a - b = \omega \\ a + b = -1 \end{cases}$$

$$1a = f \quad a = 1, b = -3$$

$$\left[\frac{b - \frac{1}{2}a}{\frac{1}{3}} \right] = -\frac{1}{3}$$

$$f(x) = \begin{cases} \tan \frac{(x+1)\pi}{2} & ; x \leq 1 \\ \frac{(x+1)(x-1)}{a(1-x)} & ; 1 < x < \omega \\ b(x - [-x]) & ; x \geq \omega \end{cases}$$

$$x=1 \rightarrow \tan \frac{3\pi}{2} = -1$$

$$\frac{(x+1)(x-1)}{a(1-x)} \rightarrow \frac{-1}{-1} = 1$$

$$\frac{(x+1)(x-1)}{a(1-x)} \rightarrow \frac{3}{-a} = -1 \rightarrow a = +3$$

$$\frac{3}{-a} = -1 \rightarrow a = +3$$

$$\frac{v}{-a} = -\frac{v}{3}$$

$$x=\omega \rightarrow b(\omega - [-\omega]) = -\frac{v}{3} \rightarrow b = -\frac{v}{6} \quad ab = -\frac{v}{10}$$

$$f(x) = a[x+1] + b[x+[a+1]] = (a+b)[x] + b[a] + b + a$$

$$a[x] + a$$

$$b[x] + b[a+1]$$

$$b + b[a]$$

عبارت صفر شوند به نسبت برابر است $\rightarrow a = -b$

$$\rightarrow f(x) = -a[a] - a + a$$

$$\frac{a[a]}{-a[a]} f(x) = -1$$

$$b[x^r - ax] - pa \rightarrow f(x) = -pa \rightarrow \frac{a}{-pa} = -\frac{1}{p} \checkmark$$

$\downarrow$
 عامل صف شوند
 بهت برکت $\rightarrow$ تابع در آن
 نقطه پیوسته
 می شود $\rightarrow b=0$

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$$f(x) = \begin{cases} \frac{x^r + mx + n}{a-x} & x \neq a \\ p & x = a \end{cases}$$

$$f(pa) = 0 \rightarrow 0 = 0 \rightarrow pa^r + pma + n = 0$$

$$\text{از طرفی} \rightarrow a^r + am + n = 0 \rightarrow -pa^r = am$$

$$m = -pa$$

$$a^r - pa^r + n = 0 \rightarrow pa^r = n$$

$$\lim_{x \rightarrow a} \frac{(x-a)(x-pa)}{a-x} = -x + pa = a = p$$

$$n - m = pa^r + pa = 1 + 4 = 5 \checkmark$$

$$f(x) = \begin{cases} (1-a)[x] + (pa^r - 1)[-x] \\ b \sin\left(\frac{\pi}{a}\right) \end{cases} \quad x \in \mathbb{Z}$$

$$\rightarrow +pa^r + a - p = 0 \rightarrow a = -1$$

$$\hookrightarrow a = \frac{p}{p}$$

$$x \notin \mathbb{Z} \xrightarrow{x=0^+} \frac{(1-a)0 + (pa^r - 1)(-1)}{1 - pa^r}$$

$$\xrightarrow{x=0} b \sin \frac{\pi}{a}$$

$$\xrightarrow{x=0^-} (1-a) + 0 = a - 1$$

$$\xrightarrow{a=-1} -p = b \sin(-\pi) \text{ و ق ع}$$

$$\xrightarrow{a=\frac{p}{p}} -\frac{1}{p} = b \sin\left(\frac{p\pi}{p}\right) \rightarrow b = \frac{1}{p} \quad \frac{a}{b} = p \checkmark$$

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$$f(x) = \begin{cases} \frac{|x^r + mx - m - 1|}{m|x^r - 1| + |x - 1|} & x \neq 1 \\ \frac{m}{m+r} & x = 1 \end{cases}$$

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

1,0

$$x < -r \rightarrow -m^r - fm - f = r m^r + m$$

$$r m^r + \omega m + r = 0 \quad \Delta < 0 \quad x$$

$$x > -r \rightarrow m^r + r^r m + r = r m^r + m$$

$$m^r - r m - r = 0 \rightarrow m = r^r - 1$$

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$$m = f \rightarrow \frac{|a^r + f a - \omega|}{f|a-1| + |a+1|} = \frac{|a-1| + |a+1|}{|a-1|(f|a+1| + 1)}$$

$$\rightarrow \lim_{a \rightarrow \frac{1}{f}} \frac{\omega + \frac{1}{f}}{f \cdot \frac{1}{f} + 1} = \frac{\frac{1}{f}}{2} = \frac{1}{2f}$$

$$\lim_{m=f} f(x) = \frac{\frac{1}{f}}{\frac{1}{f} + 1} = \frac{1}{2}$$

$$\lim_{m=-1} f(x) = 1$$

$$f(x) = \frac{\sqrt{r} |ax + a|}{|x^r + (m-r)x + a^r|}$$

$$\frac{x=a}{0/0} \rightarrow \sqrt{r} |a^r + a| = 0 \rightarrow a = -1$$

$$\rightarrow |-1 + (m-r) + 1| = 0 \rightarrow m = r$$

$$\lim_{x \rightarrow -1} \frac{\sqrt{r} |-x-1|}{|x^r+1| |x^r+1-x|} = \frac{\sqrt{r}}{r}$$

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$$f(x) = \begin{cases} \frac{x^r + |x|}{x^r + a|x|} & x \neq 0 \\ \frac{ra-1}{ra+r} & x = 0 \end{cases}$$

$$\lim_{x \rightarrow 0} f(x) = \frac{1}{a}$$

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

$$ra^r - a = ra + r$$

$$\rightarrow ra^r - ra - r = 0 \rightarrow a = -\frac{1}{r} \text{ or } r$$

$$\lim_{x \rightarrow -r} f(x) = r$$

$$\lim_{x \rightarrow \frac{1}{r}} f(x) = \frac{r}{\omega}$$

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