

$$\lim_{x \rightarrow a^+} \frac{\sqrt{4a^2 + (m+2)a + \frac{m}{2}}}{|2a^2 + (m+2)a^2|} \xrightarrow{\frac{0}{0}} \begin{cases} 2a - 2 + m = 0 \\ 4a^2 + (m+2)a + \frac{m}{2} = 0 \end{cases} \Rightarrow a = -\frac{1}{2}$$

$$\hookrightarrow \lim_{x \rightarrow a^+} = 2\sqrt{4} \rightarrow \frac{4 \tan b}{\frac{\sqrt{4}}{2}} = 2\sqrt{4} \rightarrow \tan b = \sqrt{4} \rightarrow \boxed{b = \frac{\pi}{4}}$$

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$$\frac{x^2 + ax + b}{x-1} \rightarrow \text{ایریدیت} \rightarrow x=1 \rightarrow \begin{cases} a-b=0 \\ a-b=a \end{cases} \Rightarrow a=2, b=-2 \Rightarrow \left[\frac{2-2}{1} \right] = 0$$

$$\hookrightarrow \frac{0}{0} \Rightarrow x^2 + ax + b = 0 \xrightarrow{x=1} 1+a+b=0 \rightarrow a+b=-1 \Rightarrow \boxed{b = -\frac{1}{2}}$$

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

$$\lim_{x \rightarrow 1^+} \frac{x^2 + x + 1}{a(1-x)} = -1 \xrightarrow{\frac{0}{0}} \frac{2x+1}{-a} = -\frac{2}{a} = -1 \Rightarrow \boxed{a=2}$$

$$f(0) = 1 \cdot b \rightarrow \lim_{x \rightarrow 0^-} \frac{x^2 + x - 2}{x^2(1-x)} = -\frac{2}{x^2} = -\frac{2}{0^+} = 1 \cdot b \Rightarrow \boxed{b = -\frac{2}{3}}$$

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$$a + a[x] + [a+1]b + [x]b \rightarrow a[x] + b[x] \xrightarrow{\text{مشتق}} a + a[x] + [a+1]a - a[x] = a - a[a+1]$$

$$\lim_{x \rightarrow 1^+} = \lim_{x \rightarrow 1^-} \rightarrow 0 = -a - b \Rightarrow a = -b$$

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

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$$b[x^2 - ax] \rightarrow \text{تنبه در صورتی منفرد است که مطلق} \Rightarrow b=0, \frac{a}{f(0)} = -\frac{a}{2a} = \boxed{-\frac{1}{2}}$$

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$$f(r_a) = \dots \rightarrow r_a^r + m a + n = \dots \rightarrow r_a(r_a + m) + n = \dots \rightarrow n = \varepsilon a$$

$$\begin{aligned} a^r + a m + n &= \dots \rightarrow a^r + a m + r_a = \dots \\ r_a + m &= -r \end{aligned} \quad \left. \begin{aligned} & \\ & \end{aligned} \right\} \begin{aligned} &a = r, m = -r, n = \Lambda \\ &n - m = \Lambda + r = 1 \varepsilon \end{aligned}$$

$$\begin{aligned} x=1 &\rightarrow \begin{cases} 1 - a + r - q a^r \rightarrow 4 a^r + a + r = -1 + r a^r \\ b \sin \frac{\pi}{a} \rightarrow b = -\frac{1}{r} \text{ و } a = \frac{r}{r} \\ 1 - r a^r \rightarrow 1 - \frac{r}{r} = -\frac{1}{r} \end{cases} \end{aligned}$$

$$\begin{aligned} \frac{x^r + m x - m - 1}{m x^r + x - m - 1} &\xrightarrow{x=1} \frac{r x + m}{r m x + 1} \xrightarrow{x=1} \frac{r + m}{r m + 1} = \frac{m}{m + r} \begin{cases} m = r \\ m = -1 \end{cases} \\ \frac{x^r + m x - m - 1}{m x^r + x - m - 1} &\xrightarrow{x=1} \frac{1}{r} = m = r \rightarrow \frac{|x^r - x|}{-|x^r - 1| + |x - 1|} \rightarrow \frac{1}{r} \\ \frac{|x^r + r x - a|}{r |x^r - 1| + |x - 1|} &\xrightarrow{x=\frac{1}{r}} \left(\frac{r}{\Lambda} \right) \end{aligned}$$

$$a^r + (m - r) a + a^r = \dots \rightarrow a \neq 0 \xrightarrow{\div a} a^r + a + m - r = \dots \rightarrow a = \frac{-1 \pm \sqrt{9 - 4m}}{r}$$

$$\frac{\sqrt{r} |a^r + a|}{a^r + a + (m - r) a} \xrightarrow{\div} \frac{\sqrt{r} a}{r a^r + m - r} \xrightarrow{x=a} \frac{\sqrt{r} a}{r a^r + m - r} \left. \begin{aligned} & \\ & \end{aligned} \right\} \begin{aligned} &m = r \\ &a = -1 \end{aligned} \Rightarrow \lim_{x \rightarrow -1} f(x) = \frac{\sqrt{r}}{r}$$

$$a x + a = 0 \rightarrow x = -1$$

$$x^r + (m - r) x + a^r \xrightarrow{x=-1} 0 \Rightarrow -1 + r - m + a^r = \dots \rightarrow m = a^r + 1$$

$$\lim_{x \rightarrow 0^+} \frac{x^r + x}{x^r + a x} \xrightarrow{\div} \frac{r x + 1}{r x + a} = \frac{1}{a}$$

$$f(0) = \frac{r a - 1}{r a + r} \rightarrow \frac{r a - 1}{r a + r} = \frac{1}{a} \rightarrow r a^r - a = r a + r \rightarrow r a^r - r a - r = \dots$$

$$f\left(\frac{1}{r}\right) = \left(\frac{r}{a} \right)$$