

① $\Delta < 0 \Rightarrow (m+3)^2 - \frac{4 \times 1 \times m}{1} \leq 0 \Rightarrow (m-3)^2 \leq 0 \Rightarrow \boxed{m=3}$

(توی آزمون کار $a = \frac{1}{3}$)

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

$\Rightarrow \lim_{x \rightarrow \frac{1}{3}^+} f(x) = \lim_{x \rightarrow \frac{1}{3}^+} \frac{\sqrt{4}}{3(x^2 - \frac{1}{4}x + \frac{1}{4})} = \frac{\sqrt{4}}{3(\frac{1}{9} - \frac{1}{12} + \frac{1}{4})} = \frac{\sqrt{4}}{\frac{1}{3}} = \frac{2\sqrt{4}}{1}$

$\Rightarrow f(a) = f(\frac{1}{3}) = \frac{2 \tan b}{\frac{1}{\sqrt{3}}} = \frac{2\sqrt{3}}{1} \Rightarrow \sqrt{3} \tan b = \frac{2\sqrt{3}}{1} \Rightarrow \tan b = \frac{2}{1}$

$\Rightarrow 0 < b < \pi \Rightarrow \boxed{b = \frac{\pi}{2}}$

نیل $a = \frac{1}{3}$ مضرب درجه سوم پس $\frac{1}{3}$ ریشه دارد و آن a است

$\Rightarrow 2a^3 + a^2 = 0 \Rightarrow a^2(2a+1) = 0 \Rightarrow a = -\frac{1}{2}$
 $a \neq 0$

نام و نام خانوادگی پاس‌خنامه تشریحی تکلیف شماره ۱۰۱... کلاس۸.....

$$\Rightarrow x=1 \rightarrow \text{remains } \Rightarrow f(x) = \frac{x^2+ax+b}{x-1} \Rightarrow 1+a+b=0$$

$$\omega x^2 - ax + b \cdot \overset{x=1}{\Rightarrow} \omega - a + b \rightarrow b - a = -\omega$$

$$\Rightarrow \begin{array}{l} b-a=-6 \\ b+a=-1 \end{array} \xrightarrow{\substack{+ \\ -}} \begin{array}{l} 2b=-7 \\ 2a=5 \end{array} \Rightarrow \boxed{b=-\frac{7}{2}} \quad \boxed{a=\frac{5}{2}}$$

$$\begin{aligned}
 & \text{پیش فرض ۱} \rightarrow x \leq 1 \Rightarrow \tan \frac{\pi}{4} = -1, x > 1 \Rightarrow \frac{(x-1)(x+1)}{a(1-x)} = -\frac{1}{a} \Rightarrow \frac{1}{a} = -1 \Rightarrow \boxed{a = -1} \quad (۳) \\
 & \text{دوم پیش فرض} \rightarrow \omega^+ \rightarrow b(\omega - G - 9) = 11b \Rightarrow \frac{21+x-1}{1(1-x)} = \frac{11}{-11} = -1 \Rightarrow 11b = -1 \Rightarrow b = -\frac{1}{11} \\
 & ab = -\frac{1}{11} \times -1 = \frac{1}{11}
 \end{aligned}$$

$[x+1] \rightarrow x=k-1$ به شرطی که $[x+[a+1]] \rightarrow x=k-[a+1]$ به شرطی که
 $a+b=0 \Leftrightarrow$ یعنی a و b هم زوجان هستند

$$\begin{aligned}
 \Rightarrow -a=b &\Rightarrow f(x) = a[x+1] - a[x+[a+1]] \Rightarrow k=[a] \Rightarrow [a+1]=k+1 \\
 [x+1] &= [x]+1 \text{ و } [x+[a+1]] = [x+k+1] = [x]+k+1 \\
 \Rightarrow f(x) &= a([x]+1) - ([x]+k+1) = a(-k) = -a[a] \Rightarrow f(a) = -a[a] \\
 \Rightarrow \frac{a[a]}{f(a)} &= -1
 \end{aligned}$$

چون f تابع برآیندی است پس برای پیوستگی باید $b=0$ باشد پس

$$f(x) = -xa \Rightarrow f(b) = -xa \Rightarrow \frac{a}{f(b)} = \frac{a}{-xa} = \boxed{-\frac{1}{x}}$$

$$(1) f(xa) = a \Rightarrow f(a) = a \quad (2) R f(xa) = \frac{x^2 - m x + n}{a - x} \Rightarrow f(xa) = \frac{x^2 - m x + n}{a - x}$$

$$\Rightarrow \frac{(x-a)(x-a)}{(a-x)} = - (x-a) \Rightarrow x=a \Rightarrow - (a-a) = 1 \Rightarrow \boxed{a=1}$$

$$\Rightarrow (a-a)(x-a) = x^2 - m x + n \Rightarrow \boxed{n - m = 1 + a = 1 + 1 = 2}$$

$$x \rightarrow 1 \Rightarrow (1-a) + (-a^2 + 1) = -a^2 - a + 1$$

$$x \rightarrow 1 \Rightarrow -a^2 + 1 = -a^2 - a + 1 \Rightarrow a^2 + a - 1 = 0$$

$$a = -1 \Rightarrow \text{if } a = -1 \Rightarrow b \sin\left(\frac{\pi}{2}\right) = 0 \quad \text{N}$$

$$\text{if } a = \frac{1}{b} \Rightarrow b \sin \frac{\pi}{2} = -b \quad \Rightarrow f(x) = \frac{1}{b} [x] + \frac{1}{b} [-x] \quad x \neq z$$

$$\Rightarrow -b = \frac{1}{b} ([x] + [-x]) \Rightarrow -b = \frac{1}{b} \Rightarrow b = \pm 1 \Rightarrow \frac{a}{b} = \frac{1}{\pm 1} = \boxed{\pm 1}$$

$$\lim_{x \rightarrow 1} \frac{|x^m + m x - m - 1|}{|x - 1| (m(x+1) + 1)} \Rightarrow \frac{|x - 1| |x + m + 1|}{|x - 1| (m(x+1) + 1)} = \frac{|x + m + 1|}{m(x+1) + 1}$$

$$\Rightarrow \frac{m}{m+1} = \frac{|m+1|}{m(x+1)} \begin{cases} m > -1 \\ m < -1 \end{cases}$$

$m > -1 \Rightarrow m^2 + 1m + 1 = 1m^2 + m \Rightarrow m^2 - 1m - 1 = 0 \Rightarrow (m-1)(m+1) = 0$
 $m < -1 \Rightarrow m^2 - 1m + 1 = 1m^2 + m \Rightarrow m^2 + 2m + 1 = 0 \Rightarrow (m+1)^2 = 0 \Rightarrow m = -1$

$$m = -1 \Rightarrow \lim_{x \rightarrow -1} f(x) = \frac{|x^2 + x - 1|}{1|x - 1| + |x - 1|} = \frac{1}{2} \boxed{f'(-1)}$$

$$\lim_{x \rightarrow \frac{1}{2}} \frac{|x^2 + x - 1|}{1|x - 1| + |x - 1|} = \boxed{\frac{C/P}{C/Q}}$$

$$a \text{ متغير } \Rightarrow a^3 + (m-2)a + a^2 = 0 \Rightarrow a^2 + a + (m-2) = 0 \Rightarrow \Delta = 0$$

$a \neq 0$ بجاءه

$$\Rightarrow 1 - f_{m+1} = 9 - f_m = 0 \Rightarrow m = \frac{9}{f} \Rightarrow \boxed{a = -\frac{1}{f}}$$

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

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

$\begin{cases} \rightarrow a = 2 \\ \rightarrow a = -\frac{1}{2} \end{cases}$

$$\lim_{x \rightarrow \frac{1}{f}} f(x) \Rightarrow \lim_{x \rightarrow \frac{1}{f}} \frac{x+1}{x+2} = \boxed{\frac{2}{3}}$$

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