

$$f(n) = a[n] + a + b[n] + b[a] + b$$

.ف

$$a + b[a] + b$$

$$\rightarrow a + b[a] + b + b[a]$$

$$a + b + b[a] + b + b[a] \rightarrow a + b + 0 \rightarrow a = -b / b = a$$

$$f(a) = a[a] + a - a[a] - a[a] - a = -a[a]$$

$$a[a] = -1$$

$$-a[a] = 1$$

$$f(n) = b[n] - a[n] - a - a \rightarrow b = 0$$

.د

$$f(n) = -a \rightarrow \frac{a}{-1a} = \frac{1}{1}$$

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

.ج

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

$$(x-a)(x-pa) = x^p - pa^p x + pa^p = x^p + m + n \rightarrow \begin{cases} m = -pa^p & m = -4 \\ n = pa^p & n = 1 \end{cases} \rightarrow n - m = 1 - (-4) = 5$$

$$\begin{matrix} x & 1 - pa^p \\ & b \sin(\frac{\pi}{a}) \\ 0 & a - 1 \end{matrix}$$

.هـ

$$1 - pa^p \cdot a - 1 \rightarrow pa^p + a - pa^p = 1 \rightarrow \frac{1}{p} \checkmark$$

$$\frac{-1}{p} = b \sin(\frac{\pi}{p}) = \frac{-1}{p} \cdot b = \frac{-1}{p} \cdot b = -1 \rightarrow b = \frac{1}{p}$$

$$\frac{a}{b} = \frac{\frac{1}{p}}{\frac{1}{p}} = 1$$

$$\frac{|x-1|(x+m+1)}{(x-1)(m(x+1)+1)} = \frac{x+m+1}{(m(x+1)+1)} \cdot \frac{x+1}{x+1} = \frac{m+1}{m+1}$$

10

.A

$$\frac{m+1}{m+1} = \frac{m}{m+1} \rightarrow m < -1 \rightarrow -m^2 - 1 < m \rightarrow m^2 + m + 1 > 0 \rightarrow m > -1 \rightarrow m^2 + m + 1 > 0$$

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

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

$$f(x) = \sqrt{p} |x+m+1| = |x-1| |x+1|$$

.9

$$12. \{a\} \rightarrow a \rightarrow \sqrt{p} |a^p + a| = 0$$

$$\lim_{x \rightarrow a} f(x) = \sqrt{p} |a^p + a| = 0 \rightarrow a(a+1) = 0 \rightarrow a = 0 \text{ or } a = -1$$

$$f(x) = \sqrt{p} |x-1| = \sqrt{p} |x+1| \rightarrow \lim_{x \rightarrow -1} f(x) = \sqrt{p} |-1-1| = 0$$

$$\frac{\sqrt{p} |x+1|}{|x+1| |x^2-x+1|} = \frac{\sqrt{p}}{|x^2-x+1|} = \frac{\sqrt{p}}{3}$$

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

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

$$\lim_{x \rightarrow -1} f(x) = \frac{p+1}{p-1} = \frac{4}{2} = 2$$

2