

الفصل 5: دالة فترية

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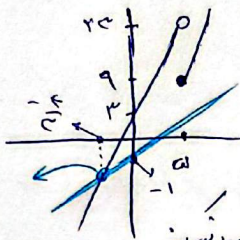
الفصل 5: دالة فترية

$$f(n) = \begin{cases} r_{n-1} & [n] > \varepsilon \rightarrow n > \omega \\ \varepsilon n + c & [n] \leq \varepsilon \rightarrow n \leq \omega \end{cases}$$

$$y = \sqrt{f(n) - x + 1} \rightarrow D_f: f(n) - n + 1 > 0$$

$$f(n) > n - 1 \rightarrow \text{طبق نقل}$$

$f(n)$ :



$$D_f: \left[-\frac{\varepsilon}{2}, +\infty\right)$$

$$\begin{aligned} \varepsilon n + r &\leq n - 1 \\ r_n &= -\varepsilon \\ n &= -\frac{\varepsilon}{2} \end{aligned}$$

نفسه  $r_{n-1}$  نرى صيغة  $n-1$  في  $n-1$

$$y = \frac{r\varepsilon n^r + r^2 n^r + 1n + c}{(\varepsilon n^r + \varepsilon n + 1)^r} = \frac{r(1n^r + r^2 n^r + 4n + 1)}{((r n + 1)^r)^r} = \frac{r(r n + 1)^r}{(r n + 1)^r} = \frac{r}{r n + 1}$$

$$\begin{aligned} r n + 1 &\neq 0 \\ n &\neq -\frac{1}{r} \end{aligned}$$

$$D_f: \mathbb{R} - \left\{-\frac{1}{r}\right\}$$

$$f(n) = \begin{cases} \frac{n^r + r n^r - n - r}{n^r - 1} & n \neq \pm 1 \rightarrow \frac{n^r(n+r) - (n+r)}{n^r - 1} = \frac{(n+r)(n^r - 1)}{(n^r - 1)} = n + r \\ \frac{a + r}{n + b} & n = \pm 1 \end{cases}$$

$$g(n) = n + c$$

$$c = r$$

$$g(n) = n + r$$

$$\begin{aligned} \rightarrow f(1) &= g(1) = \frac{a+r}{1+b} = r \rightarrow a+r = r+r+b \rightarrow \begin{cases} a+c = 1 \\ a+b = r \\ \varepsilon b = r \\ b = \frac{1}{r} \end{cases} \\ \rightarrow f(-1) &= g(-1) = \frac{-a+r}{-1+b} = 1 \rightarrow -a+r = -1+b \\ &\quad a+b = r \end{aligned}$$

$$b + c = r + \frac{1}{r} \left(\frac{a}{r}\right)$$

$$f(n) = \frac{n+1}{n-c} \quad g(n) = \frac{n^r-1}{n^r+an+b} = \frac{(n+1)(n-1)}{n^r+an+b} \rightarrow \begin{aligned} n^r+an+b &= (n-1)(n-c) \\ n^r+an+b &= n^r+(-1-c)n+c \end{aligned}$$

$$D_f: \mathbb{R} - \{c\} \rightarrow \text{نرى } g(n) \text{ في } f(n)$$

$$\rightarrow b = c$$

$$\rightarrow a = -1 - c$$

$$\begin{aligned} (1) &= (n-1)(n-c) - (n-c)r \\ &\rightarrow c > 1 \end{aligned}$$

$$c > 1 \rightarrow a + b + c = -1 + 1 + 1 = 1$$

$$f(n) = (n-c)^r (n-1)$$

$$n^r - \varepsilon n + c - n^r - \varepsilon n - c = -1n$$

$$g(n) = f(n+1) + f(1-n) = n(n-r)^r - n(n+r)^r = n((n-r)^r - (n+r)^r) = -1n^r$$

$$(n+1-c)^r (n+1-1) \quad (1-n-c)^r (1-n-1)$$

$$\rightarrow n(n-r)^r \quad \rightarrow (-n-r)^r (-n) = -n(n+r)^r$$

$$g(n) = -1n^r$$

$$f(1-r_n) = \begin{cases} \sqrt{n}+r & n \leq 0 \\ \varepsilon \sqrt{n} & n > 0 \end{cases} \quad f(-1)+f(0) = ?$$

$$\rightarrow f(-1) = \begin{matrix} 1-r_n = -1 \\ r_n = r \\ n = 1 \end{matrix} \rightarrow f(-1) = \varepsilon \sqrt{1} = \varepsilon$$

$$\rightarrow f(0) = \begin{matrix} 1-r_n = 0 \\ r_n = -r \\ n = -1 \end{matrix} \rightarrow f(0) = \sqrt{-1+r} = 1$$

$$\varepsilon + 1 = \textcircled{5}$$

$$f(n+\sqrt{n}) = n^\varepsilon + \varepsilon n$$

$$f(4) = ? \rightarrow n+r_n = 4$$

$$n+\sqrt{n}-4 = 0$$

$$(\sqrt{n}+\varepsilon)(\sqrt{n}-\varepsilon) = 0$$

$$n = \varepsilon$$

$$\rightarrow f(n+\sqrt{n}) = f^{\varepsilon} + \varepsilon(\varepsilon) = \varepsilon \cdot 4 + 1\varepsilon =$$

$$\textcircled{24\varepsilon}$$

$$f(m) = n^\varepsilon + n$$

$$f(m-1) + f(1-n) = (\cancel{n-1})^\varepsilon + \cancel{n-1} + (\cancel{1-n})^\varepsilon + \cancel{1-n} = \textcircled{0}$$

$$f(n) = \sqrt{\varepsilon n - \varepsilon a} + k - 1 \rightarrow D_f: \varepsilon n - \varepsilon a \geq 0$$

$$g(n) = \sqrt{b - \varepsilon n} + \varepsilon k$$

$$\rightarrow D_g: b - \varepsilon n \geq 0$$

$$2f - g = \{(1, k)\}$$

$$\hookrightarrow 2f(1) = 2\sqrt{\varepsilon - \varepsilon a} + 2k - 1$$

$$\hookrightarrow -g(1) = -\sqrt{b - \varepsilon} - \varepsilon k$$

$$\begin{matrix} a = \frac{\varepsilon}{\varepsilon} \\ b = \frac{\varepsilon}{\varepsilon} \end{matrix}$$

$$\rightarrow \begin{matrix} \varepsilon \sqrt{\varepsilon - \varepsilon a} - \sqrt{b - \varepsilon} + 2k - 1 - \varepsilon k = k \\ \varepsilon k = -2 + k = -1 \end{matrix}$$

در این مرحله در این حالت صبر کنید و به توضیح از اشتباهات دانه ها است

که کنیم پس رفته دانه ها به  $2f - g$  فقط شکل (1)

صاف به سبب اشتباه دانه ها  $2f$  و  $g$  به هم

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$$f(n) = \sqrt{m-n} + n \rightarrow D_f: m-n \geq 0$$

$$g(n) = \sqrt{r_n} + r \rightarrow D_g: r_n + r \geq 0$$

$$D_{fg} = [-1, v] = D_f \cap D_g$$

$$f-g(\varepsilon) = 4\sqrt{r} \rightarrow f(\varepsilon) = \sqrt{\varepsilon} + n = n + r$$

$$g(\varepsilon) = \sqrt{1} = 2\sqrt{r}$$

$$n = -r + 11\sqrt{r}$$

$$m+n = v - r + 11\sqrt{r} = \textcircled{5 + 11\sqrt{r}}$$

$$m = v \rightarrow f(m) = \sqrt{v-n} + n$$

$$\{n\} = [-1, m] = [-1, v]$$

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