

$$f(n) = \begin{cases} r_{n-1} & n \geq 0 \\ r_{n+1} & n < 0 \end{cases} \quad \& \quad g = \sqrt{r_{n-1} - n + 1} \quad n \geq 0 \quad (1) \quad g = \sqrt{n} \quad n \geq 0 \quad -1$$

$$g = \sqrt{r_{n+1} - n + 1} \quad n < 0 \quad (2) \quad g = \sqrt{r_{n+1}} \quad n < 0$$

ضابطه اول $(a > 0) \wedge n \geq 0, (n \geq 0) \quad (3)$

ضابطه دوم $r_{n+1} \geq 0 \Rightarrow (a \geq -\frac{r}{r}) \wedge n < 0 = -\frac{r}{r} \leq n < 0 \quad (4)$

$(3) \cup (4) = \left\{ -\frac{r}{r} \leq n \right\}$

$Df = \left[-\frac{r}{r}, +\infty \right)$

$$\frac{r^2(na^r + r_{n+1}^r + r_{n+1})}{(r_{n+1} + r_{n+1})^r} = \frac{r^2(n+1)}{(r_{n+1})^r} = \frac{r}{r_{n+1}} \Rightarrow Df = \left\{ r \mid r \neq \frac{1}{r} \right\}$$

$r_{n+1} \neq 0 \quad n \neq -\frac{1}{r}$

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

$b + c = \frac{1}{r} + r = r/w$

$a + r = a + c \Rightarrow c = r$

1) $a = 1 \Rightarrow 1 + r = \frac{a + r}{a + b} = \frac{a + r}{1 + b} = r \Rightarrow a + r = r + rb \Rightarrow a - rb = 1$

2) $a = -1 \Rightarrow -1 + r = \frac{a + r}{a + b} = \frac{-a + r}{b - 1} = 1 \Rightarrow b - 1 = -a + r \Rightarrow a + b = r$

$b = r \Rightarrow b = \frac{1}{r}$
 $a = r/w$

$f(a) = a + c$ (پس اول)

$\lim_{n \rightarrow +1} \frac{a^r + r_{n+1}^r - a - r}{a^r - 1} = \frac{0}{0} \quad h.p \quad \frac{r a^r + r_{n+1} - a - 1}{r a} = \frac{r - 1}{r} \quad (3) \quad f(1) = r \Rightarrow g(1) = r \Rightarrow a + c = r$

$\lim_{n \rightarrow -1} \frac{a^r + r_{n+1}^r - a - r}{a^r - 1} = \frac{0}{0} \quad h.p \quad \frac{r a^r + r_{n+1} - a - 1}{r a} = \frac{-r}{-r} \quad (1) \quad f(-1) = 1$

$f(1) = \frac{a + r}{1 + b} = r \quad r, r, b, r, a$

$f(-1) = \frac{-a + r}{b - 1} = 1 \quad b - 1 = -a + r$

$c = r, \quad \frac{1}{r} + r = r/w$
 $b = r \Rightarrow b = \frac{1}{r}, \quad a = r/w$

۴۔ سید علی ہمامان

$$\frac{g(n) \cdot (n-1)(n+1)}{a^2 + 4a + b}$$

۱. در صورت نیاز

$$\Rightarrow f(n) \sim \frac{n+1}{n-1} \Rightarrow \textcircled{C=1}$$
$$g(a) = \frac{(a-1)(a+1)}{(a-1)^r} = \frac{a^2-1}{a^r-2a+1}$$

$(n-1)! = \text{مخرج } (n) \Leftrightarrow \left(\frac{n+1}{n-1} \right) = f(n)$ بس

$$\begin{aligned} a &= y \\ b &= 1 \end{aligned}$$

- 5

~~$$(a+b)^n = \sum_{k=0}^n \binom{n}{k} a^k b^{n-k}$$~~

~~Handwritten scribbles and illegible text.~~

$$f(x) = (-x-1)^2 = (x^2 + 2x + 1) - 2x - 2 = x^2 + 2x + 1 - 2x - 2 = x^2 - 1 \quad (2)$$

$$Q + P = a^T F_M^T + F_A - a^T F_A^T - F_A = (-1 a^T)$$

$$1 - r_n = r \Rightarrow (n = -1) \Rightarrow f(r) = -1 + r + 1$$

$$1 - 2a = -1 \Rightarrow a = 1 \Rightarrow f(-1) = f$$

$$(f(r) + f(-r), \omega)$$

$$f(n\sqrt{a}) = n^f + r_n \quad n\sqrt{a} \leq 4 \Rightarrow n \leq f$$

$$f(q) = f^F + r_x f = 124 + 11 + 199$$

$$f(n-1) + f(1-n)$$

$$f(n) = n^2 + a$$

-۸ سیریلی فی مان ارا

$$h-1=t \quad f(t) + f(-t)$$

$$f(t) = t^2 + t$$

$$f(-t) = -t^2 - t$$

$$\Rightarrow f(t) + f(-t) = 0$$

دقیقاً $f-g$ (ک) $\Rightarrow$
 نه یعنی انتگرال دانسته ماترن
 فقط $\{1\}$ به بر
 یعنی دانستی که $(1+\infty)$ درستی
 $[1-\infty)$ درستی

$$f(n) = \sqrt{4n-4} + k-1$$

$$D(f) = \left[\frac{r_a}{f} + \infty \right) \Rightarrow \frac{r_a}{f} = 1 \Rightarrow a = \frac{f}{r}$$

$$g(n) = \sqrt{b-4n} + 2k$$

$$D(g) = (-\infty, \frac{b}{f}] \Rightarrow \frac{b}{f} = 1 \Rightarrow b = 4$$

$$f(n) = \sqrt{4n-4} + k-1$$

$$g(n) = \sqrt{4-4n} + 2k$$

$$2f-g = 2(k-1) - 2k = -k-2 = k \Rightarrow 2k = -2 \Rightarrow k = -1$$

$$r_a = \frac{-b}{r} - k = \frac{4}{r} - (-1) = \frac{4}{r} + 1 = 1 - 2 + 1 = 0$$

$$D_{f \times g} = [-1, v] \Rightarrow D_f \cap D_g = [-1, v] \Rightarrow D_g = [-1, +\infty)$$

-۱۰

$$D_f = (-\infty, m] \Rightarrow m = v$$

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

$$g(n) = \sqrt{2n+2}$$

$$f(3) = \sqrt{v+1} + 3$$

$$g(3) = \sqrt{n} = 2\sqrt{2}$$

$$3+n = 2\sqrt{2} \Rightarrow 3+n = 2\sqrt{2} \Rightarrow n = 2\sqrt{2} - 3$$

$m=v$

$$m+n = v + 2\sqrt{2} - 3 \Rightarrow m+n = v + 2\sqrt{2} - 3$$