

دارد حکم جنبه

با حال استقرایی

$$f(n) = \begin{cases} 2n-1 & [n] > 4 \\ 2n+3 & [n] \leq 4 \end{cases} \quad (1)$$

$$y = \sqrt{f(n) - n + 1} \longrightarrow y = \begin{cases} \sqrt{n} & n \geq 4 \\ \sqrt{2n+3} & n < 4 \end{cases} \quad \checkmark$$

$$2n+3 \geq 0 \longrightarrow n \geq -\frac{3}{2}$$

$$\longrightarrow Dy = \left[-\frac{3}{2}, +\infty\right)$$

$$\frac{2f(n)^2 + 2gn^2 + 1(n+1)^2}{(f(n)^2 + f(n+1)^2)} = \frac{(2n+1)^2}{2(Ax^2 + Bx + C(n+1))} \quad (2)$$

$$= \frac{2}{2n+1} \longrightarrow Dy = \mathbb{R} - \left\{-\frac{1}{2}\right\}$$

$$f(n) = \begin{cases} \frac{n^2 + 2n^2 - n + 1}{n^2 - 1} & n \neq \pm 1 \\ \frac{an + 1}{n + b} & n = \pm 1 \end{cases} \quad (3)$$

$$g(n) = n + c \longrightarrow c = 2$$

$$f(1) = 2$$

$$f(-1) = 1$$

$$\frac{a+2}{1+b} = 2 \longrightarrow 2+2b = a+2 \longrightarrow a = 2b+1$$

$$\frac{-a+2}{b-1} = 1 \xrightarrow{f(b)} \frac{-a+2}{b-1} = \frac{-2b+1}{b-1} \longrightarrow b = \frac{1}{2}, a = \frac{3}{2}$$

$$b + c = \frac{1}{2} + 2 = \frac{5}{2}$$

$$f(n) = \frac{n+1}{n-c}$$

$$g(n) = \frac{(n+1)(n-1)}{n^2 + an + b}$$

(4)

$$n^2 + an + b = (n-1)(n-c) = n^2 - (c+1)n + c$$

$$\hookrightarrow 1+a+b=0 \longrightarrow b = -a-1 = c$$

$$\longrightarrow a = -c-1 = -2 \longrightarrow a+b+c = 0$$

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ب = c = 1

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

(Δ)

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

$$\rightarrow \frac{(n-1)^r (n)}{(n^r - f_{n+r})} - \frac{(n+1)^r (n)}{(n^r + f_{n+r})}$$

$$= n^r - f_{n^r} + f_n - n^r - f_{n^r} - f_n = -1 n^r$$

$$f(1-n) = \begin{cases} \sqrt[n]{n} + 1 & n \leq 0 \\ f\sqrt{n} & n > 0 \end{cases}$$

(9)

$$f(-1) + f(1) = 1 + 1 = 2$$

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

(V)

$$n=4 \rightarrow f(4) = 2 \cdot 4 + 12 = 24$$

$$f(n) = n^r + n$$

(A)

$$f(n-1) + f(1-n) = (n-1)^r + (1-n)^r = 0$$

$$f(n) = \sqrt{fn - 2a + k} - 1$$

(9)

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

$$2\sqrt{f - 2a + k} - \sqrt{b - f} = 2k + 2$$

$$k = -1$$

$$f - 2a = 0 \rightarrow a = \frac{f}{2}$$

$$b - f = 0 \rightarrow b = f$$

$$f - 2 + 1 = 1$$

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

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

(10)

$$m-n=0 \rightarrow n=V \rightarrow m=V$$

$$f-g(2) = 4\sqrt{2} \rightarrow 1+n - \sqrt{2n+2} = 4\sqrt{2} \rightarrow n = 18\sqrt{2} - 1$$