

$$f(n) = \begin{cases} 2n-1 & n \geq 8 \\ 2n+2 & n < 8 \end{cases} \rightarrow g = \begin{cases} \sqrt{n} \quad (n \geq 0) \quad n \geq 8 & \xrightarrow{\wedge} n \geq 8 \\ \sqrt{2n+2} \quad (n < 8) & \xrightarrow{\wedge} \frac{2}{3}n < 8 \end{cases}$$

$$\rightarrow D_f = \left[-\frac{2}{3}, +\infty\right) \checkmark$$

$$g = \frac{r(n^r + 12n^r + 7n + 1)}{(2n+1)^r} = \frac{r(2n+1)^r}{(2n+1)^r} = \frac{r}{2n+1} \rightarrow D_f = \mathbb{R} \setminus \left\{-\frac{1}{2}\right\} \checkmark$$

وقت!

$$f(n) = \begin{cases} \frac{n^r + 2n^r - n - r}{n^r - 1} & n \neq \pm 1 \\ \frac{a+1}{n+b} & n = \pm 1 \end{cases} \quad g(n) = n + c \rightarrow b+c = 2 \checkmark$$

$$\rightarrow f(n) = 0 = -r + c \rightarrow c = r \checkmark$$

$$f(1) = \frac{a+r}{b+1} = r \quad f(-1) = \frac{r-a}{b-1} = 1 \rightarrow \begin{cases} rb+r = a+r \\ b-1 = r-a \end{cases} \rightarrow \begin{cases} rb+r = 2 \\ b = 1 \end{cases} \rightarrow \begin{cases} a = r \\ a = 1 \end{cases}$$

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

$(c=1) \rightarrow n^r + an + b = (n-1)^r$

$$\xrightarrow{c=1} n^r + an + b = (n-1)^r \rightarrow \begin{cases} a = -r \\ b = 1 \end{cases} \rightarrow a+b+c = 0 \checkmark$$

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

$$\rightarrow g(n) = (n-r)^r (n) + (n+r)^r (n) = n \cdot ((n-r)^r - (n+r)^r) = (-1n) \cdot n = -1n^2 \checkmark$$

$$f_{(1-n)} = \begin{cases} \sqrt{n}+1 & n \leq 0 \\ \varepsilon\sqrt{n} & n > 0 \end{cases} \rightarrow \begin{cases} f_{(-1)} = \sqrt{1} = \varepsilon \\ f_{(1)} = \sqrt{-1} + 1 = 1 \end{cases}$$

$$\rightarrow f_{(-1)} + f_{(1)} = \varepsilon + 1 = \delta$$

$$f_{(n+\sqrt{n})} = n^\varepsilon + \sqrt{n} \rightarrow f_{(4)} = \varepsilon + \sqrt{4} = \varepsilon + 2 = 4$$

$$\rightarrow n + \sqrt{n} = 4 \rightarrow n = \varepsilon$$

$$f_{(n)} = n^\varepsilon + n \rightarrow f_{(1-n)} + f_{(n-1)} = (1-n)^\varepsilon + (1-n) + (n-1)^\varepsilon + (n-1) \\ = (n-1)^\varepsilon + (1-n)^\varepsilon = \underbrace{((n-1) + (1-n))}_{=0} ((n-1)^\varepsilon - (n-1)(1-n) + (1-n)^\varepsilon) = 0$$

$$f_{(n)} = \sqrt{\varepsilon n - \varepsilon a} + k - 1 \rightarrow \varepsilon n \geq \varepsilon a \rightarrow n \geq \frac{\varepsilon}{\varepsilon} a \\ g_{(n)} = \sqrt{b - \varepsilon n} + \varepsilon k \rightarrow b \geq \varepsilon n \rightarrow n \leq \frac{b}{\varepsilon}$$

$$\rightarrow \frac{\varepsilon}{\varepsilon} a = \frac{b}{\varepsilon} = 1 \rightarrow \begin{cases} b = \varepsilon \\ a = \frac{\varepsilon}{\varepsilon} \end{cases} \rightarrow f_{(1)} - g_{(1)} = \varepsilon(k-1) - \varepsilon k = -\varepsilon k - \varepsilon$$

$$\rightarrow -\varepsilon k - \varepsilon = \varepsilon k \rightarrow \varepsilon k = -\varepsilon \rightarrow k = -1$$

$$f_{(n)} = \sqrt{m-n} + n \quad \left\{ \begin{array}{l} D_f \cap D_g = [1, \sqrt{1}] \rightarrow D_f = (-\infty, \sqrt{1}] \\ g_{(n)} = \sqrt{\varepsilon n + \varepsilon} \rightarrow n \geq -1 \end{array} \right. \rightarrow m = \varepsilon$$

$$f_{(1)} - g_{(1)} = \varepsilon + 1 - \varepsilon = 1 \rightarrow h = 1 + \sqrt{1} \rightarrow n + m = 1 + \sqrt{1} \\ \rightarrow n = 1 + \sqrt{1} - \varepsilon \quad m + n = 1 + \sqrt{1}$$