

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

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

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

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

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

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

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

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

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

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

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

$$\rightarrow f_{(-1)} + f_{(1)} = \varepsilon + 1 = 8$$

$$f_{(n+\sqrt{n})} = n^{\varepsilon} + \sqrt{n} \rightarrow f_{(4)} = \varepsilon^{\varepsilon} + \sqrt{4}(\varepsilon) = \varepsilon 8 + 1\varepsilon = \varepsilon 9$$

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

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

$$f_{(n)} = \sqrt{\varepsilon n - \varepsilon a} + k - 1 \rightarrow \varepsilon n \gg \varepsilon a \rightarrow n \gg \frac{\varepsilon}{\varepsilon} a \quad \left. \begin{array}{l} \\ \\ \end{array} \right\} D_f \cap D_g = \{1\}$$

$$g_{(n)} = \sqrt{b - \varepsilon n} + \varepsilon k \rightarrow b \gg \varepsilon n \rightarrow n \leq \frac{b}{\varepsilon}$$

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

$$\rightarrow -k - \varepsilon = k \rightarrow \boxed{k = -1} \rightarrow \varepsilon a - \frac{b}{\varepsilon} - k = \varepsilon - \varepsilon + 1 = \boxed{\varepsilon}$$

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

$$f_{\varepsilon} - g_{\varepsilon} = \varepsilon + \varepsilon - \varepsilon = \varepsilon \sqrt{\varepsilon} \rightarrow n = 1 + \varepsilon \sqrt{\varepsilon} \rightarrow n + m = 1 + \varepsilon \sqrt{\varepsilon}$$