

$$[n] \rightarrow f(n) = n-1 \quad [n] \xrightarrow{f(n)} f(f(n)) = 1-n \quad n \geq 0 \Rightarrow n \geq 0 \quad \text{---} \quad n \geq 0 \quad \text{---} \quad n \geq 0$$

$$[m] \rightarrow f(m) = m+1 \quad \xrightarrow{f(m)} f(f(m)) = m-1 \quad n \geq 0 \Rightarrow m \geq -\frac{1}{2}$$

$$n < 0 \Rightarrow D = \left\{ -\frac{1}{2}, 0 \right\} \quad (D = D \cup D = \left\{ -\frac{1}{2}, 0 \right\})$$

$$f(n) = (n^2 + 1)^n \quad f(n+1) = (n^2 + 1)^{n+1} \quad \rightarrow y = \frac{1}{n+1}$$

$$D = \mathbb{R} - \left\{ -\frac{1}{2} \right\} \quad (n \neq -\frac{1}{2})$$

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

$$\Rightarrow f = \frac{(n^2 - 1)(n+1)}{n^2 - 1} = n+1 = g(n) = n+1 \quad \Rightarrow c = 1$$

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

$$\Rightarrow a = 1+b \quad a = 1-b \Rightarrow 1+b = 1+b \Rightarrow b = \frac{1}{2} \quad (b+c = \frac{1}{2})$$

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

$$(n-1)(n-1) = n^2 - (1+c)n + c \Rightarrow c = b \quad a = -(1+c) \quad n \neq 1 \quad n \neq c$$

$$Df = Dg \Rightarrow n \neq 1 \quad n \neq c \Rightarrow c = 1 \Rightarrow b = 1 \Rightarrow a = -1 \Rightarrow a+b+c = 0$$

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

$$g(n) = n[(n-1)^n - (n+1)^n] = n[(n^2 - 2n + 1)^n - (n^2 + 2n + 1)^n] = -1 \quad n^2$$

$$f(n) \rightarrow 1-n = 1 \Rightarrow -1 = 1 \Rightarrow n = 1 \quad -1 \leq 0 \Rightarrow f(n) = \sqrt{-1+1} = 1$$

$$f(-1) \rightarrow 1-n = 1 \Rightarrow -1 = 1 \Rightarrow n = 1 \quad 1 > 0 \Rightarrow f(-1) = \sqrt{1+1} = 1$$

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

$$f(4) = f(4 + \cancel{4}) = 4^4 + 14 = 4^4 + 14$$

$$\left. \begin{aligned} f(n-1) &= (n-1)^r + (n-1) \\ f(1-n) &= (1-n)^r + (1-n) \end{aligned} \right\} \Rightarrow f(n-1) + f(1+n) =$$

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

صوری شریک - چون فقط از اول است

طبق دانه به ازای $n=1$ ~~$f(1) = 1^r + 1 = 2$~~ $f(1) = 1^r + 1 = 2$

$$\textcircled{1} \quad 1^r + 1 - 1 = 0 \Rightarrow 1^r + 1 = 2$$

$$\textcircled{2} \quad 2^r + 2 - 2 = 0 \Rightarrow 2^r + 2 = 4$$

هر دو برابر می‌شوند

$$f(1) = g(1) = 0 \rightarrow (f-g)(1) = 1^r + 1 - 2 = 0$$

طبق $k=0 \Rightarrow$ $\textcircled{1} \rightarrow a=1$ و $\textcircled{2} \rightarrow b=2$

$$\Rightarrow 1^r + 1 - 2 = 0 = 1 - 2 + 1 = 0 \quad \textcircled{1}$$

$$\left. \begin{aligned} 1^r + 1 &\geq 0 \Rightarrow 1 \geq -1 \Rightarrow 0 \leq 1 \\ m-1 \geq 0 &\Rightarrow m \leq 1 \Rightarrow 1 \leq m \Rightarrow 1 \leq m \end{aligned} \right\} \Rightarrow D_{f+g} = [1, 1]$$

$$\Rightarrow m=1$$