

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

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

$$n < 0 \Rightarrow D = \left\{ -\frac{1}{2}, 0 \right\} \quad D_y = D, \forall D_x = \left\{ -\frac{1}{2}, 0, +\infty \right\}$$

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

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

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

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

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

$$\Rightarrow a = 1+b \quad a = 1-b \Rightarrow 1+b = 1-b \Rightarrow b = 0 \quad b = 1 \quad b = 1$$

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

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

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

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

$$g(n) = n[(n-1)^n - (n+1)^n] = n[n^2 - 2n + 1 - (n^2 + 2n + 1)] = -4n^2$$

$$f(n) \rightarrow 1-n = 1 \Rightarrow -1 \leq 0 \Rightarrow f(n) = 1-1 = 0$$

$$f(1) \rightarrow 1-1 = 0 \Rightarrow -1 \leq 0 \Rightarrow f(1) = 1-1 = 0$$

$$f(n) + f(1) = 1 + 1 = 2 \quad f(n) = 1 \quad f(n) = 1$$

(1) $n = 4$ $f(4) = f(4 + 4) = 4 \cdot 8 + 12 = 44$

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

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ادامه یار

۹. اشتراک دامنه f و g فقط $x=1$ است یعنی:

$$D_f = \left[\frac{r_a}{r}, +\infty \right) \quad D_g = \left(-\infty, \frac{b}{r} \right] \xrightarrow{\cap} \{1\}$$

$$\frac{r_a}{r} = \frac{b}{r} = 1 \rightarrow a = \frac{r}{r} \quad b = r$$

$$r f(1) - g(1) = r \rightarrow rK - r - rK = K \rightarrow K = -1$$

$$r_a - \frac{b}{r} = K = \boxed{r}$$