

تالیف شده ۱۴ هاند نویسیان دوازدهم دفتر A

$$f(n) = \sqrt{\log_p(n-1)} \quad g(n) = \sqrt{-n^2 + 2n - 1} \quad D_{g \circ f} = ? \quad 11$$

$$g(n) \text{ ایجاب کند} \Rightarrow -n^2 + 2n - 1 \geq 0 \Rightarrow -(n^2 - 2n + 1) \geq 0 \Rightarrow n^2 - 2n + 1 \leq 0$$

$$\Rightarrow (n-1)^2 \leq 0 \Rightarrow \text{چون توان} \Rightarrow n-1=0 \Rightarrow \boxed{n=1}$$

در اینجا توان منفی است
پس فقط با برابر است

$$\Rightarrow f(n) = 2 \Rightarrow \sqrt{\log_p(n-1)} = 2 \Rightarrow \log_p(n-1) = 4 \Rightarrow n-1 = 14 \Rightarrow \boxed{n=15}$$

$$D_{g \circ f} = 14$$

$$\left. \begin{array}{l} f(n) = 2n - 8 \\ g(n) = n^2 - 2n + 1 \end{array} \right\} \Rightarrow f(g(n)) = 2(n^2 - 2n + 1) - 8 \Rightarrow 2n^2 - 4n + 11 = 0$$

$$g \circ f(n) = (2n-8)^2 - 2(2n-8) + 1 = 4n^2 + 24n - 4n + 16 + 1$$

$$\hookrightarrow 4n^2 - 24n + 17$$

$$= 4n^2 - 24n + 17 \Rightarrow 4n^2 - 24n + 11 = 0 \Rightarrow 4n^2 - 24n + 11 = 0$$

$$\Rightarrow 4n^2 - 24n + 11 = 0 \Rightarrow \Delta = 24^2 - 4 \cdot 4 \cdot 11 = 576 - 176 = 400 \Rightarrow \sqrt{\Delta} = 20 \Rightarrow n = \frac{24 \pm 20}{8}$$

$$\Rightarrow n = \frac{44}{8} = 5.5 \text{ یا } n = \frac{4}{8} = 0.5$$

$$4n^2 - 24n + 11 = 0 \Rightarrow 4n^2 - 24n + 11 = 0$$

$$g \circ f(n) = 4n^2 + 11, f(n) = 2n \Rightarrow g(n) = ?$$

$$f(n) = t = 2n \Rightarrow n = \frac{t}{2} \Rightarrow g(t) = 4\left(\frac{t}{2}\right)^2 + 11 \Rightarrow g(n) = n^2 + 11$$

$$\Rightarrow g(n-1) = (n-1)^2 + 11 \Rightarrow \frac{1}{\lambda} \frac{d}{dn} (n-1)^2 + 11 = \frac{2}{\lambda} (n-1) \Rightarrow$$

$$\min f' \Rightarrow \frac{-b}{2a} = \frac{30}{2} \Rightarrow \frac{30 \times 1}{1 \times 1 \times 20} = \frac{1}{2} \Rightarrow \text{در تابع}$$

انتقال طوی ← تأخیری در برابر

$$\frac{19}{2} - 19 + \frac{19}{2} = \boxed{\frac{1}{2}}$$

$P_{\min} = 11$

$$f(n) = n^2 - 1 \quad f \circ g(n) = n^2 - 4n - 1 \Rightarrow g(n) \Rightarrow ?$$

$$f(g(n)) \Rightarrow n^2 - 1 = n^2 - 4n - 1 \Rightarrow n^2 = n^2 - 4n + 1$$

$$\Rightarrow g = n^2 - 4n + 1 \Rightarrow g \circ f(n) = (n^2 - 1)^2 - 1(n^2 - 1) + 1$$

$$\Rightarrow 9n^4 + 14 - 2n^2 - 4n + 1 + 1 = \boxed{9n^4 - 2n^2 - 4n + 3}$$

$$f(g(n)) = f(f(n)) - 1 \Rightarrow g(n) = \frac{f(n)}{f} - V \Rightarrow f - g = f(n) - \frac{f(n)}{f} + V$$

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

$$\Rightarrow -\frac{1}{f} f(n) = -n - 1 \Rightarrow \boxed{f(n) = n^2 + 1} \quad \left(\begin{matrix} (0,0) & (1,2) \end{matrix} \right)$$

$$\Rightarrow g(n) = \frac{f(n)}{f} - V = \boxed{n-1} \Rightarrow f \circ g(n) = f(n-1) + 1 = n^2 - 2n + 2$$

$$\Rightarrow 4n + 1 = 0 \Rightarrow 4n = -1 \Rightarrow n = \boxed{-\frac{1}{4}} = a$$

$$f(n) = 9^n \quad g(n) = \log_9^n \Rightarrow f \circ g(n) = 9^{\log_9^n}$$

$$= n^{\log_9 9} = \boxed{n^1}$$

$$g \circ f(n) = \log_9 9^n = n \log_9 9 = n$$

$$f \circ g(n) \leq g \circ f(n) \Rightarrow n^1 \leq n \Rightarrow n^1 - n \leq 0 \Rightarrow n(n-1) \leq 0$$

$\Rightarrow$ intersection $\Rightarrow$

$$\Rightarrow \frac{1}{1 - \frac{1}{n}} \Rightarrow [0, 1] \Rightarrow \text{intersection} \checkmark$$

$0, 1, 1$

$$f\left(\frac{n^r - 1}{n}\right) \Rightarrow \frac{n^r - 1}{n} = n - \frac{1}{n} = t \quad \text{IV}$$

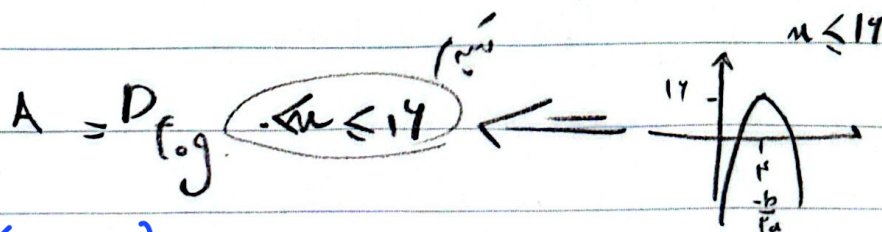
$$= \underline{n^r} + \underline{n} - \underline{1} - \underline{\frac{1}{n}} + \underline{\frac{1}{n^r}} \Rightarrow \left(n - \frac{1}{n}\right)^r + \left(n - \frac{1}{n}\right)$$

$$\Rightarrow t^r + t \Rightarrow f(t) = t^r + t \Rightarrow f(n) = n^r + n$$

$$f(n) = \log_p^n \quad g(n) = \ln n - n^r$$

$$D_{f \circ g} \Rightarrow D_{f(n)} = \log_p^n \Rightarrow n > 0 \quad g(n) \text{ is } \log_p \Rightarrow g(n) = \ln n - n^r$$

$\bigcup_{n=1}^{\infty} D_f$ b.p.b.b



$$A = (0, 1)$$

$$R_{f \circ g} = (-\infty, \infty]$$

$$A \cap B = (0, 1] \rightarrow \text{intersection}$$

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

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$$f(f(n)) = 1 - r f'(n) \quad f(n) = h(g(n)) \Rightarrow h(n-1) = (n-1)^r + r(n-1) + 1$$

$$= n^r - rn^r + rn - r \quad f(n) = t \Rightarrow ft = 1 - r t^r \Rightarrow$$

$$1 - r t^r = t^r - r t^r + \delta t - r \Rightarrow t^r + \delta t - r = 0 \Rightarrow \text{مشتق اول} \Rightarrow \text{مشتق دوم} \Rightarrow \text{تابع صعودی} \Rightarrow \text{ارزش صغری}$$

$$f(n) = n - \frac{r}{n} \quad g(n) = ?$$

11.

$$g \circ f(n) = an^r + rn$$

$$f(n) = t = n - \frac{r}{n} \Rightarrow t = \frac{n^2 - r}{n}$$

$$t_{\min} = n^r - r$$

$$g \circ f(n) = g\left(n - \frac{r}{n}\right) = an^r + rn$$

$$g(r) = 1 \quad n - \frac{r}{n} = r \rightarrow n = r \quad \wedge \quad a = -1$$

$$\begin{cases} n = r \rightarrow 9ra + 1 = 1 \rightarrow a = 0 \\ n = -1 \rightarrow -a - r = 1 \rightarrow a = -1 \end{cases}$$