

$n \in Df(n) \Rightarrow n \geq 2$
 $f(n) \in Dg(n) \Rightarrow f(n) = 0$
 $g(n) = \sqrt{-(n-2)^2} \Rightarrow Dg = \{0\}$
 $\sqrt{\log_2^{n-1}} = 2 \rightarrow \log_2^{n-1} = 2 \rightarrow n \leq 17$
 $Df \cap Dg = \{17\}$
 $n=2$

$2n^2 - 5n + 1 = f(n^2 - 2n + 3)$
 $2n^2 - 5n + 1 = 0$
 $(n-1)(n-2) = 0$
 $n=1$
 $2n^2 - 5n + 3 = 0$
 $2n^2 - 5n + 3 = 0$
 $2n^2 - 5n + 3 = 0$

$g \circ f(x) = 2x^2 + 11$
 $f(x) = 2x$
 $g(n) = \frac{a}{f} n^2 + 11$
 $\frac{a}{f} (n-1)^2 + 11 = 2(n-1)^2 + 11$
 $\min = 0 \Rightarrow \min_k = 11$

$f \circ g = 2n^2 - 5n - 1 + 3 \rightarrow 2n^2 - 5n + 2 \rightarrow n^2 - 2n + 1 \Rightarrow g(n) = (n-1)^2$
 $g \circ f = (2n-5)^2 + (2n^2 - 5n + 2)$

$f - g = -n + 1$
 $g = 2f - 1$
 $\frac{f}{2} = -n - 1 \Rightarrow f(n) = 2n + 2$
 $g(n) = 2(2n + 2) - 1 = 4n + 3$
 $f \circ g = 2(4n + 3) + 2 = 8n + 8 \Rightarrow a = -\frac{1}{8}$

$$\log_q^n \geq q^{\log_r^n} \rightarrow n \log_q^n \geq n^{\log_q^n} \Rightarrow r \geq n \rightarrow n^r - rn \leq 0$$

$$n(n-r) \leq 0$$

$$\frac{q}{+} \frac{r}{-} \frac{1}{+}$$

$$0 \leq n \leq r$$

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$$n - \frac{r}{n} = t$$

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

$$f(n) = n^r + n$$

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$$f \circ g = \log_r^{n-n^r} \quad D_{f \circ g} : n - n^r > 0 \quad \frac{1}{-} \frac{1}{+} \frac{1}{-}$$

$$R_{f \circ g} : \max_{n-n^r} = 1 \Rightarrow \max f \circ g = r \Rightarrow R_{f \circ g} = (-\infty, r]$$

$$R_{f \circ g} \cap D_{f \circ g} = (0, r]$$

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

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

$$n^r + \omega n - r = 0$$

مشتق: $n^r + \omega \rightarrow 0$ $\Rightarrow$ تابع درجه ۲ است $\Rightarrow$ اریتم دارد

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$$g(r) = 1 \rightarrow g\left(\frac{r-f}{r}\right) = 1$$

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

$$r = \frac{n^r - f}{n}$$

$$n^r - f = rn \quad n^r - rn - f = 0$$

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

$$n \leq -1$$

$$an^r + rn \xrightarrow{n=-1} -a-r=1$$

$$an^r + rn \xrightarrow{n=r} 9fa+1=1$$

$$\boxed{a = -1}$$

$$\boxed{a = 0}$$

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