

$f(n) = \begin{cases} \cot \frac{\pi}{n} & n < 1 \\ \sqrt{n^2+1} & n > 1 \end{cases}$
 $f \circ f\left(\frac{1}{\sqrt{2}}\right) \Rightarrow \cot \frac{\pi}{\sqrt{2}} \Rightarrow \cot \frac{\pi}{\sqrt{2}} \Rightarrow \sqrt{2}$ (1, 0)

$f\left(\frac{1}{n}\right) = \sqrt{\frac{n^2-1}{n^2}}$
 $g(n) = r \cos^n n$
 $f \circ g\left(\frac{\pi}{4}\right) \Rightarrow r \cos^{\frac{\pi}{4}} \Rightarrow \frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}}$ (1, 0)

$f(n) = [n]$
 $g(n) = \frac{n}{1-n}$
 $f \circ g(\sqrt{2}) \Rightarrow \frac{\sqrt{2}}{1-\sqrt{2}} \times \frac{1+\sqrt{2}}{1+\sqrt{2}} = \frac{\sqrt{2}(1+\sqrt{2})}{1-2} \Rightarrow -\sqrt{2}-2 \Rightarrow -\sqrt{2}-2$

$f(n) = \sin n$
 $g(n) = n \sqrt{1-n^2}$
 $f \circ g\left(\frac{\pi}{2}\right) \Rightarrow \frac{\pi}{2} \Rightarrow 1 - \left(\frac{\pi}{2}\right)^2 \Rightarrow \sqrt{1 - \left(\frac{\pi}{2}\right)^2} \Rightarrow \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$

$f(n) = \{(e, \omega), (e, \omega), (\omega, 1), (\omega, 1)\}$
 $g(n) = \{(e, e), (e, e), (e, \omega), (\omega, 1)\}$

$f \circ g(n) = e \rightarrow e \rightarrow \omega, e \rightarrow e \rightarrow \omega, e \rightarrow \omega \rightarrow 1, \omega \rightarrow 1 \rightarrow 1 \Rightarrow \{(e, \omega), (e, \omega), (e, 1), (\omega, 1)\}$

$g \circ f(n) = e \rightarrow \omega \rightarrow \omega, e \rightarrow \omega \rightarrow \omega, \omega \rightarrow 1 \rightarrow 1, \omega \rightarrow 1 \rightarrow 1 \Rightarrow \emptyset$ (1)

$f \circ f(n) = e \rightarrow \omega \rightarrow \omega, \omega \rightarrow \omega \rightarrow \omega, \omega \rightarrow 1 \rightarrow 1, \omega \rightarrow 1 \rightarrow 1 \Rightarrow \emptyset$

$g \circ g(n) = e \rightarrow e \rightarrow \omega, e \rightarrow e \rightarrow \omega, e \rightarrow \omega \rightarrow 1, \omega \rightarrow 1 \rightarrow 1 \Rightarrow \{(e, \omega), (e, \omega), (e, 1), (\omega, 1)\}$

$f = \{(e, 1), (e, 1), (e, \omega), (\omega, 1)\}$
 $g = \{(e, 1), (e, 1), (e, \omega), (\omega, 1)\}$
 $(e, 1) \in f \circ g$
 $(e, 1) \in g \circ f$

$e \rightarrow \omega \Rightarrow 1 \Rightarrow b = \omega$
 $e \rightarrow \omega \Rightarrow 1 \Rightarrow b = \omega$

$g, f \text{ is } \Rightarrow f(f(n)) \in n \times r, g(n \times r) = n \times r, g \circ f(-1) = 5 \times 1$

$a(an+b)+b \Rightarrow \frac{a^2n+ab+b}{a^2n+ab+b}$
 $a = -1 \Rightarrow -ab+b = -b \Rightarrow -1(-1) - 1 = -1$
 $a = 1 \Rightarrow ab = 1 \Rightarrow 1(-1) = -1$

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

$f(n) = \sqrt{n+1}$
 $g(n) = \sqrt{n}$
 $(f+g) \circ f$

$f\left(\frac{r(n+1)}{n^2}\right) = \sqrt{\frac{r(n+1)}{n^2}}$
 $\frac{r(n+1)}{n^2} = b \Rightarrow -\frac{r(b-1)}{b-r} \Rightarrow f\left(\frac{r(b-1)}{b-r}\right) + b \Rightarrow \frac{r(b-1)}{b-r} + b$

$f\left(n + \frac{1}{n}\right) = n^2 + \frac{1}{n^2} \Rightarrow b^2 = n^2 + \frac{1}{n^2} + \frac{r(n)}{n} + \frac{r}{n^2} \Rightarrow r\left(n + \frac{1}{n}\right)$

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

$$g(a) \Rightarrow g(\sqrt{2}), g(1) = 2.$$

$$f(a) = a\sqrt{a} \Rightarrow a\sqrt{a} = 2\sqrt{2} \Rightarrow 2, 1 \Rightarrow \textcircled{1}$$

$$a\sqrt{a} = 1$$

اختلافاتی که خود را تابع $g \circ f$ a ما را قطع می کنند؟

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