

← ماحول میں مقناطیس ←

$$f(f(\frac{r}{s}))$$

$$\cot \frac{\pi}{\cancel{r}} \times \frac{\cancel{r}}{s} = \cot \frac{\pi}{4} = \sqrt{3}$$

$$f(\sqrt{3}) \rightarrow \sqrt{3+1} = 2$$

$$f(g(\frac{\pi}{r})) \rightarrow g(\frac{\pi}{r}) = \cancel{r} \times \frac{1}{\cancel{r}} = \frac{1}{r}$$

← 2 ← 1 ←

$$f(\frac{1}{r}) = f(r) = \sqrt{\frac{r-1}{r}} = \frac{\sqrt{r}}{r}$$

$$f(g(\sqrt{r})) \rightarrow g(\sqrt{r}) = \frac{\sqrt{r}}{1-\sqrt{r}} \times \frac{1+\sqrt{r}}{1+\sqrt{r}} =$$

← 2 ← 1 ←

$$-(\sqrt{r}+r) = -\sqrt{r}-r \rightarrow f(-\sqrt{r}-r) = [-\sqrt{r}-r] = -r$$

$$g(f(\frac{\pi}{r})) \rightarrow f(\frac{\pi}{r}) = \sin \frac{\pi}{r} = \frac{\sqrt{r}}{r} \rightarrow g(\frac{\sqrt{r}}{r}) =$$

← 1 ←

$$\frac{\sqrt{r}}{r} \sqrt{\frac{1-\frac{r}{r}}{\frac{r}{r}}} = \frac{\sqrt{r}}{r} \times \frac{\sqrt{r}}{r} = \frac{1}{r}$$

$$f(g(n)) = \{(1, \omega), (2, \omega), (3, 1), (1, 1)\}$$

← 1

$$g(f(n)) = \{ \}$$

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$$g(g(n)) = \{(1, 1), (2, 1), (3, 1)\}$$

$$(1, 1) \in f(g(n))$$

$$(1, 1) \in g(f(n)) \rightarrow$$

← 1

$$g(n) = 1$$

$$\rightarrow a = 1$$

$$g(1) = 1 \rightarrow b = 1$$

$$\rightarrow (a, b) = (1, 1)$$

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

← 1

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

$$g(f(-1)) = ?$$

$$g(1n + 1) \Rightarrow 1n + 1 = t \rightarrow n = \frac{t-1}{1}$$

$$f(\underbrace{f(n)}_{-1}) = \kappa_x - 1 + \mu = -1$$

$$g(-1) \rightarrow \kappa_n + \mu = -1 \rightarrow \kappa_n = -1 \rightarrow n = -1$$

$$g(-1) = \mu_x - 1 - 1 = -1$$



$(f+g) \circ f$

$$\mapsto \sqrt{1-(1-x^2)} + \sqrt{1-x^2} \quad z \pm x + \sqrt{1-x^2}$$

$$O_{(f+g) \circ f} = [-1, 1]$$

$$\frac{-1}{-} \quad \frac{1}{+} \quad \frac{-}{-}$$

$$f\left(\frac{4x+1}{x-2}\right) = 4x+1$$

$\leftarrow 2x+1 \leftarrow 9$

$$4x+1 = 4t-2 \rightarrow x(4-t) = -2t-1 \rightarrow$$

$$x = \frac{2t+1}{4-t} \rightarrow f(t) = \frac{1t+2+4t-1}{4-t} =$$

$$f(t) = \frac{5t+1}{4-t}$$

$$f(x) = \frac{5x-1}{x-2}$$

$\rightarrow x \neq 2$

$$f\left(n + \frac{1}{n}\right) = \left(n^k + \frac{1}{n^k}\right)$$

2.9

$$\begin{aligned} &\xrightarrow{t} \\ t^k &= n^k + \frac{1}{n^k} + kn + \frac{k}{n} \rightarrow k\left(n + \frac{1}{n}\right) \end{aligned}$$

$$t^k - kt = n^k + \frac{1}{n^k} \rightarrow f(t) = t^k - kt \rightarrow$$

$$f(n) = n^k - kn$$

$$g(n) = (n-1)(n-\sqrt{2})$$

$$f(n) = n\sqrt{n} \rightarrow g(f(n)) = (n\sqrt{n}-1)(n\sqrt{n}-\sqrt{2})$$

$$g(f(n)) = (n\sqrt{n}-1)(n\sqrt{n}-\sqrt{2}) \rightarrow n = 1, 2$$

$$\rightarrow |2-1| = 1$$