

$$f \circ f\left(\frac{\pi}{4}\right) \rightarrow 1) \cot \frac{\pi}{4} = \sqrt{2} \quad 2) f(\sqrt{2}) = 2 \quad (1)$$

$$f \circ g\left(\frac{\pi}{4}\right) = ? \quad 1) g\left(\frac{\pi}{4}\right) = 2 \left(\cos^2 \frac{\pi}{4}\right) = 2 \times \frac{1}{2} = 1 \quad \text{الف} \quad (2)$$

$$2) f\left(\frac{1}{2}\right) = 0 \rightarrow \text{جواب}$$

$$f \circ g(\sqrt{2}) \quad 1) g(\sqrt{2}) = \frac{\sqrt{2}}{1-\sqrt{2}} \times \frac{1+\sqrt{2}}{1+\sqrt{2}} \text{ نزل } \frac{\sqrt{2}+2}{-1} = -\sqrt{2}-2$$

$$2) f(-\sqrt{2}-2) = [-\sqrt{2}-2] \rightarrow \text{جواب}$$

$$g \circ f\left(\frac{\pi}{2}\right) \rightarrow f\left(\frac{\pi}{2}\right) = \sin \times \frac{\pi}{2} = \sqrt{2} \times \frac{1}{2} \quad (3)$$

$$1) g\left(\frac{\sqrt{2}}{2}\right) \rightarrow \frac{\sqrt{2}}{2} \times \sqrt{1-\frac{1}{2}} = \frac{\sqrt{2}}{2} \times \sqrt{\frac{1}{2}} = \frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{2} = \frac{1}{2}$$

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$$f \circ g = \{(2, a), (2, a), (4, 12), (8, 12)\} \quad (4)$$

$$g \circ f = Q \quad f \circ f = Q \quad g \circ g = \{(2, 8), (2, 4), (4, 16)\}$$

$$15 \quad a \leq 2 \leftarrow f = g\left(\frac{1}{2}\right) \leftarrow f(x) \leq 2 \leftarrow (2, 2) \text{ صر } (5)$$

$$(2, a) \leftarrow b \text{ صر } a \leftarrow g(2) \leq 1 \leftarrow (2, 1) \text{ صر}$$

$$f \circ f = a(a^2 + b) + b \leq a^2 x + ab + b \leq 2 + \epsilon \quad (6)$$

$$\text{if } a \leq 2 \quad b \leq 1 \quad a^2 \leq 2 \quad a^2 x \leq 2x$$

$$20 \quad \text{if } a \leq 2 \quad b \leq 1$$

$$f(x) = Cx + d$$

$$g(2x+3) = C(2x+3) + d \leq 2x-2 \quad C \leq \frac{2}{3}$$

$$f(x) = 2x-3 \quad 1) f(x) = 2x+1 \quad 2) f(x) = 2x-3$$

$$25 \quad g \circ f = -1 \leftarrow g \circ f = -1$$

g of (x) = ?

طین سنج (✓)

$$f(x) = \begin{cases} 0 & x < 0 \\ \sqrt{1-x} & x \geq 0 \end{cases} \quad g \text{ of } (x) = \begin{cases} 1 & x > 0 \\ \sqrt{1-x} & x \leq 0 \end{cases}$$

$$(f+g)(x) = \sqrt{x} + \sqrt{1-x} = \sqrt{\sqrt{1-x} + \sqrt{1-1+x^2}} \quad (1)$$

$$\sqrt{1-x} + |x| \quad \text{for } x \geq 0 \rightarrow 1 \geq x^2 \rightarrow (x \leq 1) \rightarrow -1$$

$$D \in [0, 1] \quad \leftarrow \text{استراک } x \geq 0 \text{ با } x \leq 1$$

$$\frac{1^2 x + 1}{x - 1} = e \rightarrow x = \frac{1 + e^2}{e - 1} \quad \text{اب (9)}$$

$$F(t) = \left(\frac{1^2 t + 1}{t - 1} \right) + (w) \rightarrow f(x) = \frac{1^2 x - 1}{-1^2 + x}$$

$$\left(x + \frac{1}{x}\right) \leq e \quad f(t) = t^2 - 1^2 t$$

$$\rightarrow \frac{1}{x^2} + x^2 + 1^2 \left(x + \frac{1}{x}\right) = t^2$$

$$f(t) = t^2 - 1^2 t$$

$$\rightarrow f(x) = x^2 - 1^2 x$$

(۱۰)

چون β نقطه قطع می‌کند من g را می‌نویسیم
 $g(f(x)) = 0$ $\beta = \sqrt{2}$ $x = 1$

اختلاف ۲ است : $x = 1$ ، $x \sqrt{x} = 1$ ۱) $f(x)$

۲) $x \sqrt{x} = \sqrt{2} \rightarrow x = 4$

SAMA NOTEBOOK