

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

$$f \circ g \left(\frac{\pi}{4} \right) = ? \quad 1) g \left(\frac{\pi}{4} \right) = 2 \left(\cos^2 \frac{\pi}{4} \right) = 2 \times \frac{1}{2} = 1 \quad 2) f(1) = 1 \quad \text{جواب} \quad (1,0)$$

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

$$g \circ f \left(\frac{\pi}{2} \right) \rightarrow f \left(\frac{\pi}{2} \right) = \sin \frac{\pi}{2} = 1 \quad g(1) = \frac{1}{1-1} = \text{undefined} \quad (2)$$

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

$$f \circ g = \{(2,0), (2,0), (4,12), (8,12)\} \quad (5) \quad (4)$$

$$g \circ f = Q \quad f \circ f = Q \quad g \circ g = \{(2,8), (2,4), (4,10)\}$$

$$a \leq 2 \leftarrow f = g \left(\frac{1}{2} \right) \leftarrow f(x) \leq 2 \leftarrow (2,2) \text{ or } (4,2) \quad (2)$$

$$(2,0) \leftarrow b \text{ or } a \leftarrow g(0) = 1 \leftarrow (2,1) \text{ or } (4,1) \quad (5)$$

$$f \circ f = a(a^2 + b) + b \leq a^2 x + ab + b \leq 2 + \epsilon \quad (9)$$

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

$$\text{if } a \leq -4 \quad b \leq -3$$

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

$$g(2x+3) = C(2x+3) + d = 2Cx + 3C + d = 2Cx + 2 \quad (5)$$

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

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

$$g \text{ of } (x) = ?$$

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Def-IR

$f(x)$

$$\begin{cases} 0 < x < 1 \\ \sqrt{1-x} \geq 0 \\ |x+1| \neq 0 \rightarrow x > -1 \\ |x+1| \neq 1 \rightarrow x \neq 0 \end{cases}$$

$$Dg = x \neq -1$$

$$g \text{ of } (x) = \frac{1}{2x^2 - 2\sqrt{1-x}}$$

$$Dg = (0, 1) \cup (-1, 1) \rightarrow x < 0$$

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

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$$\sqrt{1-x} + |x| \leq \sqrt{1-x} + \sqrt{1-x} \rightarrow \sqrt{1-x} \leq \sqrt{1-x} \rightarrow 1 \geq x \rightarrow x \in [0, 1]$$

$$D(f+g) = [-1, 1]$$

$$\frac{1+x}{x-1} \leq t \rightarrow x \leq \frac{1+t}{t-1}$$

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

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

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

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

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

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چون α نقطه قطع می‌کند من g را می‌نویسیم

$$x \leq 1 \quad B = \sqrt{x} \quad g(f(x)) = 0$$

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۱) $x \sqrt{x} = 1 \rightarrow x = 1$ اختلاف ۱ است

$$۲) x \sqrt{x} = \sqrt{x} \rightarrow x = 1$$

SAMA NOTEBOOK