

$$f(x) = \begin{cases} (a+1)(x+1) & : x > 1 \\ a+x & : x \leq 1 \end{cases}$$

$$\rightarrow \gamma f(\omega) = f(\gamma + a) \Rightarrow \gamma(a+1)(\omega + \gamma) = \gamma a - \gamma + a$$

$$\Rightarrow \ln a = \ln a \cdot \ln a = -1 \cdot a = -1$$

$$a = -1, \wedge$$

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

$$\frac{1}{\sqrt{x}} \xrightarrow{x = \sqrt{1-\sqrt{3}}} \frac{1}{\sqrt{1-\sqrt{3}}} \xrightarrow{\times \frac{\sqrt{1+\sqrt{3}}}{\sqrt{1+\sqrt{3}}}} \frac{\sqrt{1+\sqrt{3}}}{\sqrt{1-\sqrt{3}} \sqrt{1+\sqrt{3}}}$$

$$\frac{1}{\sqrt{x}} = \frac{1}{\sqrt{y+\sqrt{y}}} + \frac{1}{\sqrt{y-\sqrt{y}}}$$

$$= \sqrt{1+3} + \sqrt{1-3} + 1\sqrt{1+3} + \sqrt{1-3} + 1$$

$$Y_1 \sqrt{3} + Y_2 \sqrt{3} = 6 \rightarrow \sqrt{4}$$

$$y f(x) - y f(-y) = y x^y - x$$

→ $f(x) = ax^2 + bx + c \Rightarrow 1x^2 + 1x + 1 \Rightarrow 1x^2 + 1x + 1$

$$\Rightarrow -ax^p + \omega bx - c = x^p - x \rightarrow c=0, -a=1 \Rightarrow \underline{a=-1}, \omega b=1 \Rightarrow \underline{b=\frac{1}{\omega}}$$

$$\Rightarrow f(x) = -\cancel{f \cdot x} - \frac{1}{\omega} x$$

$$(x+y) f(x) - x f(x+y) = f(x) - mx + m-1$$

$$x = -1 \Rightarrow f(q) = 1 + y_m + v_{m-1}$$

$$x=a \Rightarrow y f'(a) = y m-1 \Rightarrow y f'(a)$$

$$\mu \Rightarrow 18 + 9m = 9m - 1 \Rightarrow 18 = -1 \Rightarrow m = \frac{19}{9}$$

$$f(0) = 9 \times \frac{9}{r} - \frac{1}{r} = \frac{8}{r} = \frac{V_0}{r}$$

$$\frac{75}{12} = \frac{75}{4} = 18.75 \Rightarrow f(9) = \frac{75}{4 \times 9} = \frac{75}{36} = 2.08$$

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

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

$$f(x) = (x-1)\sqrt{1-x} \rightarrow (-x)^9 \Rightarrow D_f = (-\infty, 1]$$

→ $D_f = D_g$ ✓

$$g(x) = -\sqrt{(1-x)^3} \rightarrow (1-x)^3, 1-x=0 \Rightarrow \text{Dg} = (-\infty, 1]$$

$$(x-1)\sqrt{1-x} = -(1-x)\sqrt{1-x} = -\sqrt{(1-x)^2(1-x)} = -\sqrt{(1-x)^3}$$

$$f(x) = x\sqrt{x} \rightarrow x \geq 0 \rightarrow D_f = [0, +\infty) \rightarrow D_f = D_g \mid x\sqrt{x} = \sqrt{x^3} \rightarrow \text{نو تابع برابرند}$$

$$g(x) = \sqrt{x^3} \rightarrow x \geq 0 \rightarrow D_g = [0, +\infty)$$

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$$f(x) = [\sqrt{x} - \lfloor \sqrt{x} \rfloor] \quad x \geq 0 \rightarrow D_f = [0, +\infty) \rightarrow D_f = D_g \mid x \in [0, +\infty) \Rightarrow x - \lfloor x \rfloor = 0$$

$$g(x) = \sqrt{x} - \lfloor x \rfloor \rightarrow x \geq 0 \Rightarrow x \geq \lfloor x \rfloor \Rightarrow D_g = [0, +\infty)$$

$$\sqrt{x} \in \mathbb{N} \Rightarrow \sqrt{x} - \lfloor \sqrt{x} \rfloor = 0$$

$$\sqrt{x} \notin \mathbb{N} \Rightarrow 0 < \sqrt{x} - \lfloor \sqrt{x} \rfloor < 1 \Rightarrow [\sqrt{x} - \lfloor \sqrt{x} \rfloor] = 0 \Rightarrow f(x) = 0 = g(x) \rightarrow \text{نو تابع مساوی اند}$$

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$$g = \{(-1, 1), (1, 1), (2, 3), (3, 5), (0, 2), (\sqrt{2}, 1)\} \quad f = \{(1, 2), (2, 3), (3, 1), (0, 0)\}$$

$$\text{الف} \left[\frac{f+g}{f-g} \right] (1) = \frac{2+1}{2-1} = 3 \quad \text{ب} \left[\frac{f+g}{f-g} \right] (2) = \frac{3+3}{3-3} \rightarrow \text{تخریب نشده}$$

$$\text{ج} f(0) \cdot g(-1) = 0 \times 1 = 0$$

$$f(x) = \{(2, 1), (-1, 4), (0, 5), (-2, 2), (3, -1)\}$$

$$\text{الف} \cancel{g(x) = \{(2, 1), (-1, 4), (0, 5), (-2, 2), (3, -1)\}}$$

$$g(x) = f(3x-1) = \{(1, 1), (0, 4), (\frac{1}{3}, 5), (-\frac{1}{3}, 2), (\frac{4}{3}, -1)\}$$

$$h(x) = f(|x|) = \{(2, 1), (-2, 4), (0, 5), (3, -1), (-3, -1)\}$$

$$\cancel{h(x) = \{(2, 1), (-2, 4), (0, 5), (3, -1), (-3, -1)\}}$$

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$$\text{الف} \frac{f(1)+g(1)}{f(1)-g(1)} = \frac{2+1}{2-1} = 3$$

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$$\text{ب} \frac{f(2)+g(2)}{f(2)-g(2)} = \frac{3+3}{3-3} = \frac{6}{0} \rightarrow \text{تقریب نشده!}$$

$$\text{پ} f(-1) \times g(-1) = 0 \times 1 = 0$$

