

$$f(a) = v(a+1) = va+v$$

سازمانی

$$1fa + 1f = va - f + a \quad 1fa + 1f = fa - f$$

$$10a = -1 \quad \boxed{a = -1/10}$$

$$\sqrt{v-\sqrt{w}} + \frac{1}{\sqrt{v-\sqrt{w}}} + v + \sqrt{v+\sqrt{w}} + \frac{1}{\sqrt{v+\sqrt{w}}} + v \quad (2)$$

$$\sqrt{v+\sqrt{w}} + \sqrt{v-\sqrt{w}} + \sqrt{v+\sqrt{w}} + \sqrt{v-\sqrt{w}} + v$$

$$v(\underbrace{\sqrt{v+\sqrt{w}} + \sqrt{v-\sqrt{w}}}_A) \rightarrow \boxed{v\sqrt{4+v}} \rightarrow \text{جواب آخر}$$

$$A^2 = v + \sqrt{w} + v - \sqrt{w} + v = 4 \quad A = \sqrt{4}$$

$$v(vf(x) - wf(-x)) = fx^v - x \quad (3)$$

$$w(vf(-x) - wf(x)) = fx^v + x$$

$$\begin{cases} vf(x) - wf(-x) = 1x^v - x \\ wf(-x) - vf(x) = 1x^v + x \end{cases}$$

$$-wf(x) = 1x^v + x \quad f(x) = -fx^v - \frac{1}{w}x$$

$$\boxed{x=-1} \quad 4f(0) = 1w + 1m + 1m - 1 \quad f(0) = \frac{1w+2m}{4} \quad (4)$$

$$\boxed{x=0} \quad vf(0) = 1m - 1 \quad f(0) = \frac{1m-1}{v} = \frac{1w}{v} = \frac{1w}{4} \quad (5)$$

$$\frac{1m-1}{v} = \frac{1w+2m}{4v}$$

$$4m - v = 1w + 2m \quad \uparrow$$

$$2m = 1w \quad \boxed{m = \frac{1w}{2}}$$

$$vf(-1) = \frac{1w+1v+1w}{-1} = f(-1) = -9 \quad (6)$$

پس: $y = ax + b$ $ax + b + \frac{a}{x} + b = vb + \frac{ax^v + a}{x}$ $f(x) = 1x^v - 4$

$$\frac{ax^v + bx + a}{x} = \frac{1x^v - 1x + 1w}{x} \quad a=1w \quad b=-4 \quad y = 1x^v - 4$$

$f(-1) = -9$

$D_f = 1-x \geq 0 \quad x \leq 1 \quad D_f = D_g$ سارافانفی ④

$D_g = (1-x)^3 \geq 0 \quad x \leq 1 \quad -\sqrt{(1-x)^3(1-x)} = (x-1)\sqrt{1-x}$
 $-1 \cdot \frac{1-x}{1} = (x-1) \quad f=g$

$D_f = x \geq 0 \quad \leadsto \quad D_f = D_g \quad \sqrt{x^3 \cdot x} = |x| \times \sqrt{x} = x\sqrt{x}$ ⑤
 $D_g = x^3 \geq 0 \quad x \geq 0 \quad f=g$

$D_f = x \geq 0 \quad \leadsto \quad 0 \text{ خارج}$ $D_f = D_g$
 $f=g$

$D_g = \begin{matrix} x \geq 0 \rightarrow 0 \\ x \leq 0 \rightarrow \sqrt{x} \times x \end{matrix} \leadsto 0 \text{ خارج}$

الف) $\frac{f(1)+g(1)}{f(1)-g(1)} = \frac{1+1}{1-1} = \frac{2}{0} = \infty$ ⑥

ب) $\frac{f(2)+g(2)}{f(2)-g(2)} = \frac{2+2}{2-2} = \frac{4}{0} = \infty$

ج - $f(0) \cdot g(-1) \leadsto f(0)=0 \quad 0 \times g(-1)=0$

$g(x) =$ ⑩
 $\left\{ (1,1) (0,0) \left(\frac{1}{2}, \frac{1}{2}\right) \left(-\frac{1}{2}, \frac{1}{2}\right) \left(\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}\right) \right\}$
 $\begin{matrix} \mu x - 1 = 1 & x = 1 \\ \mu x - 1 = -1 & x = 0 \\ \mu x - 1 = 0 & x = \frac{1}{\mu} \\ \mu x - 1 = -\mu & x = \frac{1-\mu}{\mu} \\ \mu x - 1 = \mu & x = \frac{1+\mu}{\mu} \end{matrix}$

د) $h(x) = f(|x|)$ $|x|=1 \quad x=\pm 1$
 $|x|=0 \quad x=0$
 $\left\{ (1,1) (-1,1) (0,0) \left(\frac{1}{2}, \frac{1}{2}\right) \left(-\frac{1}{2}, \frac{1}{2}\right) \right\} \quad |x|=1 \quad x=\pm 1$