

$$r f(a) = f(-r) + a \Rightarrow r(a+1)(a+r) = ra - f + a \Rightarrow 1fa + 1f = fa - f \Rightarrow 1A = -1A$$

$$\boxed{a = -1A}$$

$$f(x) = \sqrt{x} + \frac{1}{\sqrt{x}} + r \quad f(r-\sqrt{r}) + f(r+\sqrt{r}) = ?$$

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

$$\left. \begin{aligned} f(r-\sqrt{r}) &= \sqrt{r-\sqrt{r}} + \sqrt{r+\sqrt{r}} + r \\ f(r+\sqrt{r}) &= \sqrt{r+\sqrt{r}} + \sqrt{r-\sqrt{r}} + r \end{aligned} \right\} r(\sqrt{r-\sqrt{r}} + \sqrt{r+\sqrt{r}} + r) = \boxed{2\sqrt{r} + f}$$

$$(\sqrt{r-\sqrt{r}} + \sqrt{r+\sqrt{r}})^2 = f + 2\sqrt{(r-\sqrt{r})(r+\sqrt{r})} = f + 2 = 4 \Rightarrow \sqrt{r-\sqrt{r}} + \sqrt{r+\sqrt{r}} = \sqrt{4}$$

$$\rightarrow r f(x) - r f(-x) = f x^r - x \Rightarrow f f(x) - 4 f(-x) = 1x^r - r x$$

$$\rightarrow r f(x) - r f(-x) = f x^r + x \Rightarrow 4 f(-x) - 4 f(x) = 1x^r + r x$$

$$\Rightarrow f(x) = r x^r + x \Rightarrow \boxed{f(x) = -f x^r - \frac{x}{2}}$$

$$\rightarrow x=0 \Rightarrow r f(0) - 0(f(r)) = 0 - 0 + r m - 1 \Rightarrow r f(0) = r m - 1$$

$$f(0) = \frac{r m - 1}{r}$$

$$\rightarrow x=-r \Rightarrow 0(f(-r)) + 4 f(0) = 14 + r m + r m - 1 \Rightarrow \frac{4 f(0)}{r} = \frac{14 + 2 r m}{r}$$

$$f(r) = \frac{14 + 2 r m}{r}$$

$$f(0) = \frac{r m - 1}{r}$$

$$\Rightarrow \frac{4 f(0)}{r} = \frac{14 + 2 r m}{r} \Rightarrow \boxed{\frac{4 f(0)}{r} = \frac{14 + 2 r m}{r}}$$

$$\frac{r m - 1}{r} = \frac{14 + 2 r m}{4} \Rightarrow r \cdot 1 \cdot m = 14 m - 4 \Rightarrow 14 m = r m \Rightarrow m = \frac{4}{r}$$

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

-1

$$\boxed{f(-1) = -4}$$

$$f(x) = (x-1)\sqrt{1-x} \Rightarrow 1-x \geq 0 \Rightarrow 1 \geq x \Rightarrow D_f = (-\infty, 1]$$

$$g(x) = -\sqrt{(1-x)^3} \Rightarrow (1-x)^3 \geq 0 \Rightarrow 1-x \geq 0 \Rightarrow D_g = (-\infty, 1]$$

 ≤ 0

$$g(x) = -\sqrt{(1-x)^3} = -|1-x| \sqrt{1-x} \Rightarrow -1+x\sqrt{1-x} = (1-x)\sqrt{1-x}$$

ضابطه برابر

$$\boxed{f(x) = g(x)}$$

$$f(x) = x\sqrt{x} \Rightarrow x \geq 0 \Rightarrow Df = [0, +\infty)$$

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

$$g(x) = \sqrt{x^3} \Rightarrow y(x) = \sqrt{x^3 x} \Rightarrow y(x) = (x)\sqrt{x} = x\sqrt{x}$$

$$f(x) = g(x)$$

$$f(x) = [\sqrt{x} - [\sqrt{x}]] \Rightarrow x \geq 0 \Rightarrow Df = [0, +\infty)$$

$$g(x) = \sqrt{x - |x|} \Rightarrow x - |x| \geq 0 \Rightarrow \begin{cases} x < 0 \Rightarrow x + x = 2x \\ x \geq 0 \Rightarrow x - x = 0 \end{cases} \Rightarrow Dg = [0, +\infty)$$

$$g(x) = \sqrt{x - |x|} \Rightarrow 0 \text{ min}$$

$$f(x) = g(x)$$

$$\text{مثال } f(x) = [\sqrt{x} - [\sqrt{x}]] = [1, \sqrt{1} - [1, \sqrt{1}]] = [1, \sqrt{1} - 1] = 0 \rightarrow 0 \text{ min}$$

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

$$\text{ا) } \left(\frac{f+g}{f-g} \right)(1) \Rightarrow x=1 \rightarrow f(1)=2, g(1)=1 \Rightarrow \frac{2+1}{2-1} = 3$$

$$\text{ب) } \left(\frac{f+g}{f-g} \right)(2) \Rightarrow f(2)=2, g(2)=2 \Rightarrow \frac{2+2}{2-2} = \frac{4}{0} \rightarrow \text{ن.م.} = x$$

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

$$\text{د) } g(x) = f(x_{x-1}) \Rightarrow g\left\{\left(-\frac{1}{x}, 2\right), (0, 2), (1, 1), \left(\frac{1}{x}, 2\right), \left(\frac{x}{x}, -1\right)\right\}$$

$$x_{x-1} = 2 \Rightarrow x=1$$

$$x_{x-1} = -1 \Rightarrow x=0$$

$$x_{x-1} = 0 \Rightarrow x = \frac{1}{x}$$

$$x_{x-1} = -1 \Rightarrow x = -\frac{1}{x}$$

$$x_{x-1} = 2 \Rightarrow x = \frac{x}{x}$$

$$f(x) = h(x)$$

$$f(|x|) \Rightarrow |x| \Rightarrow |x| = 0 \Rightarrow x=0$$

$$\Rightarrow |x| = 2 \Rightarrow x = \pm 2$$

$$\Rightarrow |x| = 3 \Rightarrow x = \pm 3$$

$$h = \{(2, 1), (2, -1), (0, 2), (-2, 1), (-2, -1)\}$$

s.a.m