

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

-7

$$f(r+\sqrt{r}) + f(r-\sqrt{r})$$

$$x_1 \times x_r = (r+\sqrt{r})(r-\sqrt{r}) = r-r=0$$

$$x_r = \frac{1}{x_1}$$

$$S = \sqrt{r+\sqrt{r}} + \sqrt{r-\sqrt{r}}$$

$$f(x_1) = \sqrt{x_1} + \frac{1}{\sqrt{x_1}} + r = \sqrt{x_1} + \sqrt{x_r} + r$$

$$S^r = (r+\sqrt{r}) + (r-\sqrt{r})$$

$$f(x_r) = \sqrt{x_r} + \frac{1}{\sqrt{x_r}} + r = \sqrt{x_r} + \sqrt{x_1} + r + r \sqrt{(r+\sqrt{r})(r-\sqrt{r})}$$

$$f(r+\sqrt{r}) = \sqrt{r} + r = f(r-\sqrt{r}) \xrightarrow{\text{بالجواب}} r\sqrt{r} + r$$

$$S^r = r + r\sqrt{r} = r$$

در بیان دهانی

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

-1

$$f(-r) = ra + r(-r) = ra - r$$

$$r(va+v) = (ra-r) + 0$$

$$1a + 1r = ra - r \quad 1 \cdot a = -1r$$

$$a = \frac{-1r}{1} = -\frac{r}{1}$$

$$(x+r)f(x) - rf(x+r) = rx^{r-m+1} + r^{m-1}$$

-11

$$(0+r)f(0) - rf(0+r) = f(0)^{r-m+1} + r^{m-1}$$

$$rf(0) = r^{m-1} \rightarrow rf(0) = a^{m-1}$$

$$(-r+r)f(-r) - rf(-r) = f(-r)^{r-m+1} + r^{m-1}$$

$$rf(0) = (r+r) + r^{m-1} \quad rf(0) = a^{m-1} + a$$

$$a^{m-1} = a^{m-1} + a$$

$$a^{m-1} = 1a \rightarrow m = \frac{a}{r}$$

$$rf(0) = r\left(\frac{a}{r}\right) - 1 \rightarrow f(0) = \frac{ra}{r}$$

$$rf(-x) - rf(-(-x)) = f(-x)^{r-m+1} - r^{m-1}$$

$$-rf(x) + rf(-x) = rx^{r-m+1} + r^{m-1}$$

$$\int rf(x) - rf(-x) = rx^{r-m+1}$$

$$\int -rf(x) + rf(-x) = rx^{r-m+1}$$

$$\begin{cases} rf(x) - rf(-x) = rx^{r-m+1} \\ -rf(x) + rf(-x) = rx^{r-m+1} \end{cases}$$

$$-rf(x) + rf(-x) = rx^{r-m+1}$$

$$-af(x) = r \cdot x^{r-m+1}$$

$$f(x) = -\frac{rx^{r-m+1}}{a}$$

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

-4

$$g(x) = \sqrt{(1-x)^r}$$

$$1-x \geq 0 \rightarrow x \leq 1 \rightarrow D_f(-\infty, 1]$$

$$(1-x)^r \geq 0 \rightarrow 1-x \geq 0 \rightarrow x \leq 1$$

$$D_g(-\infty, 1] \rightarrow (D_f = D_g) \quad \checkmark \text{ بالبرهان}$$

$$f\left(\frac{1}{x}\right) = a\left(\frac{1}{x}\right) + b = \frac{a}{x} + b \quad -a$$

$$f\left(\frac{1}{x}\right) + f(x) = \left(\frac{a}{x} + b\right) + (ax + b) = rb + \frac{a}{x}$$

$$f\left(\frac{1}{x}\right) + f(x) = \frac{ax^r + rbx + a}{x}$$

$$\frac{ax^r + rbx + a}{x} = \frac{rx^r - 1rx + r}{x}$$

$$a = r \quad b = -1 \quad f(x) = rx - 1$$

$$f(-1) = r(-1) - 1 = -r - 1 = -9$$

$$f(x) = [\sqrt{x} - \lfloor \sqrt{x} \rfloor]$$

$$g(x) = \sqrt{x - \lfloor x \rfloor}$$

$$D_f = [0, +\infty)$$

$$x - \lfloor x \rfloor \geq 0 \rightarrow D_g = \mathbb{R}$$

برابری

$$f(x) = x\sqrt{x}$$

$$g(x) = \sqrt{x^2}$$

- 7

$$f: x \geq 0 \rightarrow D_f = [0, +\infty)$$

$$x^2 \geq 0 \rightarrow x \geq 0 \rightarrow D_g = [0, +\infty)$$

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

برابر

$$2.) f(0) = 0$$

$$g(-1) = 1$$

$$0 \times 1 = 0$$

$$\frac{f+g}{f-g}(1) = \frac{f(1) + g(1)}{f(1) - g(1)} = \frac{1+1}{1-1} = \text{undefined}$$

- 9

$$\cup f(2) = 2, g(2) = 2 \quad \left(\frac{f+g}{f-g} \right)(2) = \frac{2+2}{2-2} = \frac{4}{0} = \text{undefined}$$

$$D_f = \{x, -1, 0, -x, 2\}$$

این

$$x-1=2 \rightarrow x=3 \rightarrow x = \frac{3}{f}$$

$$g(\frac{3}{f}) = f(2) = 1 \rightarrow (\frac{3}{f}, 1)$$

$$x-1=-1 \rightarrow x=0 \rightarrow x=0 \rightarrow g(0) = f(-1) = 2 \rightarrow$$

(0, 2)

$$x-1=-2 \rightarrow x=-1 \rightarrow x = -\frac{1}{f} \rightarrow g(-\frac{1}{f}) = f(-2) = 2 \rightarrow (-\frac{1}{f}, 2)$$

$$x-1=0 \rightarrow x=1 \rightarrow x = \frac{1}{f} \rightarrow g(\frac{1}{f}) = f(0) = 0 \rightarrow (\frac{1}{f}, 0)$$

$$x-1=2 \rightarrow x=3 \rightarrow x=2$$

$$g(2) = f(2) = 1 \rightarrow 2, -1$$

$$S = \{(\frac{3}{f}, 1), (0, 2), (\frac{1}{f}, 0), (-\frac{1}{f}, 2), (2, -1)\}$$

- 10

ب)

$$|x| = 0 \rightarrow x = 0 \rightarrow h(0) = f(0) = a \rightarrow (0, a)$$

$$|x| = r \rightarrow x = \pm r \rightarrow h(r) = f(r) = 1 \rightarrow (r, 1)$$

$$x = -r \rightarrow h(-r) = f(r) = 1 \rightarrow (-r, 1)$$

$$|x| = r \rightarrow x = \pm r$$

$$x = r \rightarrow h(r) = f(r) = -1 \rightarrow (r, -1)$$

$$x = -r \rightarrow h(-r) = f(r) = -1 \rightarrow (-r, -1)$$

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