

$$f(x) = \sqrt{a + \sqrt{a - x}} = \sqrt{(\sqrt{a - x} + 2)^2} = \sqrt{a - x} + 2$$

①

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

3

$$f(x) + g(x) = 2\sqrt{a - x} \rightarrow a + b\sqrt{a - x}$$

$$c = -x \quad a = 0$$

$$b = 2$$

$$(a+1)(a-1)$$

$$\frac{a+b}{c} = -\frac{1}{p}$$

6

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

$$(2, -\frac{1}{4}) \quad (0, \frac{1}{4})$$

②

$$f(1) = \text{تج}$$

$$f(3) = \text{نق}$$

$$f(0) = \frac{1}{4}$$

12

$$f(2x) = (-\frac{1}{4}, \frac{1}{4}) \quad (-\frac{1}{4}, \frac{1}{4}) \quad (\frac{1}{4}, \frac{1}{4}) \quad (\frac{1}{4}, \frac{1}{4}) \quad (1, 1)$$

③

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

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$$2g(x) + 1 = (-2, 1) \quad (1, 3) \quad (3, 4) \quad (-1, 1)$$

18

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

$$\{2, 3, -2\} \leftarrow \text{کینه عزیب}$$

④

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$$h(x) = a \quad h(3) = 0$$

$$h(x) = 4$$

$$(2, 5) \quad (3, 6) \quad (-2, 4)$$

$$g(x) = 0$$

$$g(x) = -1 \quad (x \text{ در خارج قیافه نیست})$$

$$x > 0 \quad \sqrt{1-x} > 0$$

$$\sqrt{1-x} < 1$$

6

$$\sqrt{x} \sqrt{1-x} > 0 \quad -1 + 1 = 0$$

$$0 \leq x \leq 1 \quad x \neq 1$$

$$D = \{0, 1, \frac{1}{2}\}$$

9

$$-x^2 + 4x - 4 \geq 0 \quad -(x-1)(x-4) \geq 0$$

$$-\frac{1}{4} + \frac{1}{4} = 0$$

-4

$$D_f = \{1, 2, 3, 4\}$$

$$h = (1, 0) \text{ و } (2, \frac{\sqrt{2}}{2}) \text{ و } (4, 0)$$

12

$$y = (x-1)^2 + 1$$

$$x-1 = \sqrt[3]{y-1}$$

$$R = \mathbb{R}$$

-V

15

$$y = \frac{1}{(x-1)^2 - 1}$$

$$(x-1)^2 - 1 = \frac{1}{y}$$

$$(x-1)^2 = \frac{y+1}{y}$$

18

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

$$+\frac{1}{4} - \frac{1}{4} = 0$$

$$R = (-\infty, 1] \cup (0, +\infty)$$

21

$$\frac{b}{ka} = 1$$

$$R = [4, +\infty)$$

-A

$$\frac{b}{ka} = 3$$

$$\mathbb{R} (-\infty, 12]$$

این تابع را در $x=0$ به هم وصل کردیم (ج)

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

د) $\begin{vmatrix} 3 \\ -9 \end{vmatrix} \rightarrow R = [0, 3]$

الف) $R = \mathbb{R}$

ب) $R = \mathbb{R}$

ج) $R = [0, +\infty)$

د) $R = [0, +\infty)$

الف) $yx - 2y = 3x + 1$ $yx - 2y = 3y + 1$ $x = \frac{3y+1}{y-2}$

$R = \mathbb{R} - \{2\}$ $y-2$

ب) $yx + y = 2x + 1$ $yx - 2x = 1 - y$ $x = \frac{1-y}{y-2}$

$R = \mathbb{R} - \{2\}$