

تابع هست. $y_1^3 = y_2^3 \rightarrow y_1 = y_2$
 $\begin{cases} y^3 = 2x^2 + 2x - 1 \\ y^3 = 2x^2 + 2x - 1 \end{cases} \rightarrow y^3 = 2x^2 + 2x - 1$

ب) $y = \{x \pm \frac{1}{2}\}$ $\rightarrow x = \frac{1}{2} \rightarrow \frac{1}{2} \times 0.5 = 0 \rightarrow y = \{x \pm \frac{1}{2}\}$

ج) $x + y - 2\sqrt{xy} = 0 \rightarrow (\sqrt{x} - \sqrt{y})^2 = 0 \rightarrow \sqrt{x} = \sqrt{y} \rightarrow x = y$
 تابع هست. $x = y$

تابع هست. $2y - |y| = x^2$
 $\begin{cases} y \geq 0 \rightarrow 2y - y = y = x^2 \\ y < 0 \rightarrow 2y - (-y) = 3y = x^2 \\ y = \frac{x^2}{3} \end{cases}$

ب) $x = 0.1 \rightarrow [y] = 1 \rightarrow y \in [1, 2)$ تابع نیست.

$f(x) = \begin{cases} x^2 - b & |x - 1| \geq 2 \rightarrow x - 1 \geq 2 \rightarrow x \geq 3 \\ a + x & 0 \leq x \leq 3 \end{cases}$
 $x = 3 \rightarrow 18 - b = 4 + a$
 $a + b = 14$

$\sqrt{a - b} - x^2$
 $a - ab - a^2 = 0 \rightarrow a(1 - b - a) = 0$
 $a = 0$ $\rightarrow 1 - b - a = 0 \rightarrow 1 - b - 0 = 0 \rightarrow a + b = 1$
 $a = 1 - b$
 $a - b^2 - b^2 = 0 \rightarrow a = 1 - b$
 $2b^2 + b - 1 = 0$
 $b = -1$
 $a = 1 - b = 2$
 $a + b = 2 - 1 = 1$

$\sqrt{ax^2 + bx + c} \rightarrow \frac{1}{2} = 2 \rightarrow 2b + c = 0 \rightarrow c = -2b$
 $D = (-\infty, 2) \rightarrow$ صارت زیر $a = 0$
 $a + c = 3|b|$
 $-2b - 3(-b) = b$

$$y = \sqrt{\frac{3x+2}{x+b} + a} \quad D_f: (2, +\infty) \rightarrow \text{خرج: } 2$$

$$2+b=0 \rightarrow \boxed{b = -2}$$

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الف) $x^3 - x \geq 0$

$$x(x+1)(x-1) \geq 0 \quad \begin{array}{ccc|c} -1 & 0 & 1 & \\ \hline - & + & - & + \end{array}$$

$$\downarrow \quad \downarrow \quad \downarrow$$

$$0 \quad -1 \quad 1$$

$$D = [-1, 0] \cup [1, +\infty)$$

ب) $|x| - 1 > 0$

$$|x| > 1 \rightarrow x > 1$$

$$\downarrow$$

$$x < -1$$

$$D = (-\infty, -1) \cup (1, +\infty)$$

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الف) $x \neq 0$ خرج $\neq 0$ $|x| \neq [x] \rightarrow x \neq \text{عدد صحيح}$

$$D = \mathbb{R} - \{x | x \in \mathbb{Z}, x \geq 0\}$$

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ب) $\sqrt{x} + \sqrt{y} = 9$ $\sqrt{y} = 9 - \sqrt{x}$ $x \geq 0$

$$y = 81 + x - 18\sqrt{x} \quad D = [0, +\infty)$$

$$\left[2x - \frac{1}{x}\right] + \left[2x + \frac{x}{x}\right] = 0$$

$$\downarrow \quad \uparrow \quad \downarrow$$

$$-\frac{1}{x} \quad -\frac{1}{x} \quad \frac{1}{x}$$

$$[2x+1] + [2x+1] = 0$$

$$2[2x+1] = 0$$

$$[2x+1] = 0$$

$$[2x] = -1$$

$$-1 \leq 2x < 0$$

$$-\frac{1}{2} \leq x < 0$$

$$D = \mathbb{R} - [-\frac{1}{2}, 0)$$

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$$y = \sqrt{1 - \log(x-a)}$$

$$D = (b, c]$$

$$c - b =$$

$$a + b - b = \boxed{a}$$

$$x - a > 0$$

$$x > a$$

$$x > \frac{a}{p}$$

$$\downarrow$$

$$\frac{a}{p} = b$$

$$a + \frac{a}{p} = c$$

$$1 - \log(x-a) \geq 0$$

$$\log(x-a) \leq 1$$

$$x-a \leq 10$$

$$x \leq 10 + a$$

$$x \leq a + \frac{a}{p}$$

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