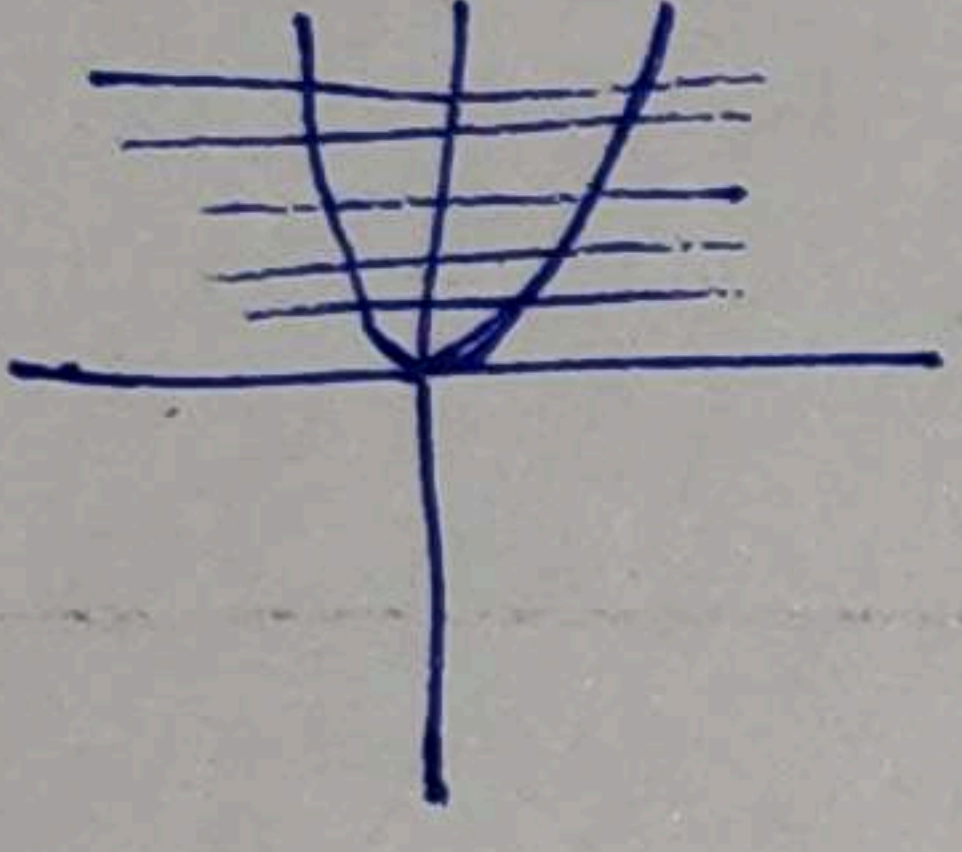


الف) $\left. \begin{aligned} y_1^3 &= 2x^2 + 2x - 1 \\ y_2^3 &= 2x^2 + 2x - 1 \end{aligned} \right\} y_1^3 = y_2^3$ تابع	ب) $x = \frac{\pi}{4} \rightarrow \frac{\pi}{4} \cos y = 0$ $\cos y = 0 \rightarrow y = \frac{\pi}{4}, \frac{3\pi}{4}, \dots$ تابع نیست	۱
ج) $\frac{x+y}{2} = \sqrt{xy} \Rightarrow (x+y)^2 = 4xy$ $(x-y)^2 = 0 \Rightarrow x=y$ تابع	د) $y^3 + 2y = \dots$ تابع	۲
الف) $ y + x^2 = 2y \Rightarrow \sqrt{y} = x \Rightarrow y = x^2$ همواره مثبت 	ب) $x=0$ $[y]=1$ $y=[1, 2)$ تابع نیست	۳
$x=3 \rightarrow 2x^2 - b = a + 2x \rightarrow 18 - b = a + 6$ $a + b = 12$		۴
$-x^2 - bx + a > 0$ $\frac{b \quad a}{- \quad +}$ $a + b = -b \Rightarrow a = -2b$ $ab = -a \Rightarrow b = -1 \Rightarrow a = 2$ $\Rightarrow a + b = 2 + (-1) = 1$		۵
$ax^2 + bx + c > 0$ $\frac{a \quad b \quad c}{+ \quad - \quad -}$ $a=0 \rightarrow bx + c = x - 2 \Rightarrow b = -1 \quad c = 2$ $\rightarrow 3a + c - 3 b = 0 + 2 - 3 = -1$		۶

$$\frac{x^2 + 2}{x + b} + a > 0$$

$$x \neq -2 \Rightarrow b = -2$$

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$$\text{الف) } x^3 - x \geq 0 \Rightarrow x(x^2 - 1) \geq 0$$

$$-\frac{1}{+} \frac{0}{+} \frac{1}{+} \Rightarrow D_f = [-1, 0] \cup [1, +\infty)$$

$$\text{ب) } |x| - 1 > 0$$

$$|x| > 1 \Rightarrow D_f = (-\infty, -1) \cup (1, +\infty)$$

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$$\text{الف) } |x| - [x] \neq 0 \Rightarrow |x| \neq [x]$$

$$\Rightarrow \mathbb{R} - \mathbb{Z}^+$$

$$\text{ب) } \sqrt{y} = 9 - \sqrt{x}$$

$$9 - \sqrt{x} \geq 0 \Rightarrow x \leq 81$$

$$\sqrt{x} + \sqrt{y} = 9 \rightarrow D_f = [0, 81]$$

1

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

$$\Rightarrow 2[a] > -2 \Rightarrow [a] \geq -1 \Rightarrow a \geq 0$$

$$2x - \frac{1}{x} \geq 0 \Rightarrow 2x \geq \frac{1}{x} \Rightarrow x \geq \frac{1}{2} \Rightarrow D_f = \left[\frac{1}{2}, +\infty\right)$$

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$$1 - \log(x - a) \geq 0 \Rightarrow \log(x - a) \leq 1 \Rightarrow x - a \leq 10 \Rightarrow x \leq \frac{b + a}{2} \quad I$$

$$x - a > 0 \Rightarrow x > a \Rightarrow x > \frac{a}{2} \quad II$$

$$\frac{[n]}{[n]} (b, c) \rightarrow c - b = \frac{1 + a}{2} - \frac{a}{2} = \frac{1}{2}$$

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