

19, 10, 5

زنگنه

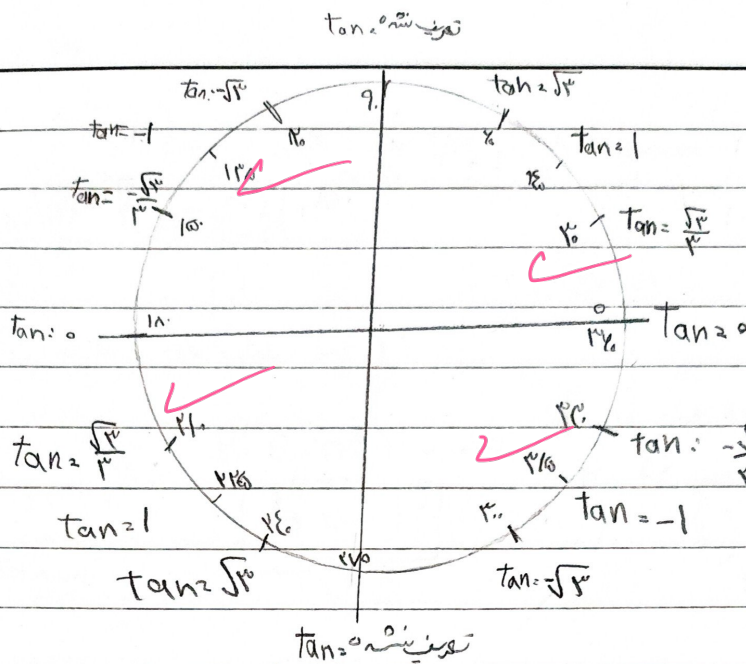
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$$\sin \frac{\pi}{4} + \cos \frac{\pi}{4} + \tan \frac{\pi}{4} \Rightarrow \frac{1}{\sqrt{2}} + (-1) + 1(-1) = \frac{1}{\sqrt{2}} - 1 - 1 = \frac{1}{\sqrt{2}} - 2$$

$$-\cos \frac{\pi}{4} + \sin \frac{\pi}{4} - \tan \frac{\pi}{4} \Rightarrow -\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2} - 1 = -1$$

$$\cot \frac{\pi}{4} + \cot \frac{\pi}{4} - \tan \frac{\pi}{4} \Rightarrow \frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2} - 1 = \frac{\sqrt{2}}{2}$$

$$\cos(\sin \pi) + \sin(\cos \frac{\pi}{2}) = \cos(0) + \sin(0) = 1 + 0 = 1$$

$$f(x) = \begin{cases} x^2 + 1 & x \geq 1 \\ x^2 + 1 & x < 1 \end{cases} \Rightarrow x = 1 \quad a^2 + 1 = 2a + 1 \Rightarrow a^2 + 1 - 2a = 0 \Rightarrow (a-1)^2 = 0 \Rightarrow a = 1$$

$$f(x) = \begin{cases} x^2 + 1 & x \geq 1 \\ x^2 + 1 & x < 1 \end{cases}$$

$$f(1) = 1^2 + 1 = 2$$

Senobar



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$$F(x) = \begin{cases} 2x^2 - b & |x+1| \geq 2 \\ a+2x & -2 \leq x \leq 1 \end{cases} \Rightarrow |x+1| \geq 2 \Rightarrow x \leq -3 \rightarrow \boxed{x \leq -3}$$

$$x+1 \leq -2 \rightarrow \boxed{x \leq -3}$$

$x=3$ در هر دو شرط کار می کند. پس

$$x = -3 \rightarrow 2x^2 - b \Rightarrow 18 - b$$

$$\rightarrow a + 2x \Rightarrow a - 6 \Rightarrow 18 - b = a - 6$$

$$\boxed{24 = a + b}$$

$$y = \frac{1}{x^2 - 4x^2} \Rightarrow \frac{1}{x^2(x-4)} \rightarrow R - \{0, 4\}$$

$$y = \frac{1}{2x^2 + 5x^2 + 2x + 4} \Rightarrow \frac{1}{x^2(x+2) + 2(x+2)} \Rightarrow \frac{1}{(x+2)(x^2+2)}$$

$$\Rightarrow D_f = R - \{-2\}$$

$$y = \sqrt{x^2 - 1} + \sqrt{x - 5} \Rightarrow x^2 - 1 \geq 0 \Rightarrow x^2 \geq 1 \Rightarrow \boxed{x \leq -1 \text{ or } x \geq 1} \quad (I)$$

$$x - 5 \geq 0 \Rightarrow \boxed{x \geq 5} \quad (II)$$

$$(I) \cap (II) = [5, +\infty)$$

$$y = \frac{\sqrt{4-2x}}{\sqrt{4x-2}} \Rightarrow 4-2x \geq 0 \Rightarrow \boxed{2 \geq x} \quad (I)$$

$$4x - 2 \geq 0 \Rightarrow 2x \geq 1 \Rightarrow \boxed{x \geq \frac{1}{2}} \quad (II)$$

$$(I) \cap (II) = \left(\frac{1}{2}, 2\right]$$

$$y = \sqrt{4x-a} + \sqrt{b-3x} \Rightarrow b \geq 3x$$

$$4x \geq a$$

دامنه عبارت های زیر را بدین صورت $(k, +\infty)$ یا به صورت $(-\infty, k)$ می باشد.
که اشتراک آن ها مساوی $\{2\}$ شده پس دامنه عبارت ها $[2, +\infty)$ و $(-\infty, 2]$ بوده است.

$$b \geq 3x \Rightarrow b = 4$$

$$4x \geq a \Rightarrow a = 12 \quad \left\{ \begin{array}{l} b = 4 \\ a = 12 \end{array} \right. \Rightarrow \frac{b}{a} = \frac{4}{12} = \frac{1}{3}$$

$$y = \sqrt{\frac{x^2 - x - 4}{x^2 - 13x^2 + 4y}} \Rightarrow y = \sqrt{\frac{(x-3)(x+2)}{(x-4)(x^2-4)}} \Rightarrow y = \sqrt{\frac{(x-3)(x+2)}{(x-4)(x-2)(x+2)}}$$

$$\frac{-3}{+} \frac{-2}{-} \frac{2}{-} \frac{4}{+} \Rightarrow \frac{-3}{+} \frac{-2}{-} \frac{2}{-} \frac{4}{+}$$

$$D_f = (-\infty, -3) \cup (-2, 2) \cup (4, +\infty)$$

$$y = \sqrt{\frac{x^3 - 2x^2 - 5x + 4}{x^3 + 2x^2 - 5x - 4}} \Rightarrow y = \sqrt{\frac{(x-1)(x-2)(x+2)}{(x+1)(x+2)(x-2)}} \Rightarrow y = \sqrt{\frac{(x-1)}{(x+1)}}$$

$$\begin{array}{r} x^3 - 2x^2 - 5x + 4 \quad | \quad x-1 \\ -x^3 + x^2 \\ \hline -x^2 - 5x + 4 \\ +x^2 - x \\ \hline -4x + 4 \\ +4x - 4 \\ \hline 0 \end{array}$$

$$\begin{array}{r} x^3 + 2x^2 - 5x - 4 \quad | \quad x+1 \\ -x^3 - x^2 \\ \hline x^2 - 5x - 4 \\ -x^2 - x \\ \hline -4x - 4 \\ +4x + 4 \\ \hline 0 \end{array}$$

$$D_f = (-\infty, -3) \cup (-2, 2) \cup (4, +\infty)$$

$$y = \sqrt{2[x]} - 4 \Rightarrow 2[x] \geq 4 \Rightarrow [x] \geq 2 \Rightarrow D_f = [2, +\infty)$$

$$y = \sqrt{2[x]} - 5 \Rightarrow 2[x] \geq 5 \Rightarrow [x] \geq \frac{5}{2} \Rightarrow [x] \geq 3 \Rightarrow D_f = [3, +\infty)$$



(1) $y = \sqrt{\frac{x+1}{|x-2|}} + \sqrt{\frac{4-x}{x^2+2x+2}} \Rightarrow (I) \Rightarrow \frac{x+1}{|x-2|} \Rightarrow \frac{-1}{-x+2}$

(I) (II) $\Rightarrow \frac{4-x}{x^2+2x+2} \Rightarrow \frac{4}{x^2+2x+2}$ مخرج بنیاد منفرجه

(10) 1, 1, 1, 1, 1

(II) $\Rightarrow \frac{4-x}{x^2+2x+2} \Rightarrow \frac{4}{x^2+2x+2}$ ریشه بنیاد

(I) $\cap$ (II) $\Rightarrow$

$D_f = [-1, 2) \cup (2, 4]$

$y = \sqrt{x-2} + \sqrt{4-x} \Rightarrow [x] \geq 2 \Rightarrow [2, +\infty)$

$\Rightarrow x \in [2, +\infty) \Rightarrow (-\infty, 2)$ استمراری ندارند

$D_f = \emptyset$

(10) $y = \sqrt{\frac{x+1}{|x-2|}} + \sqrt{\frac{4-x}{x^2+2x+2}}$

$\frac{x+1}{|x-2|} \geq 0 \Rightarrow x \geq -1, x \neq 2$ I

$\frac{4-x}{x^2+2x+2} \geq 0 \Rightarrow x \leq 4$ II

$\Delta < 0$, دھوارہ مثبت و بدون منفی

$D_f = [-1, 2) \cup (2, 4] \subseteq [-1, 4] - \{2\}$