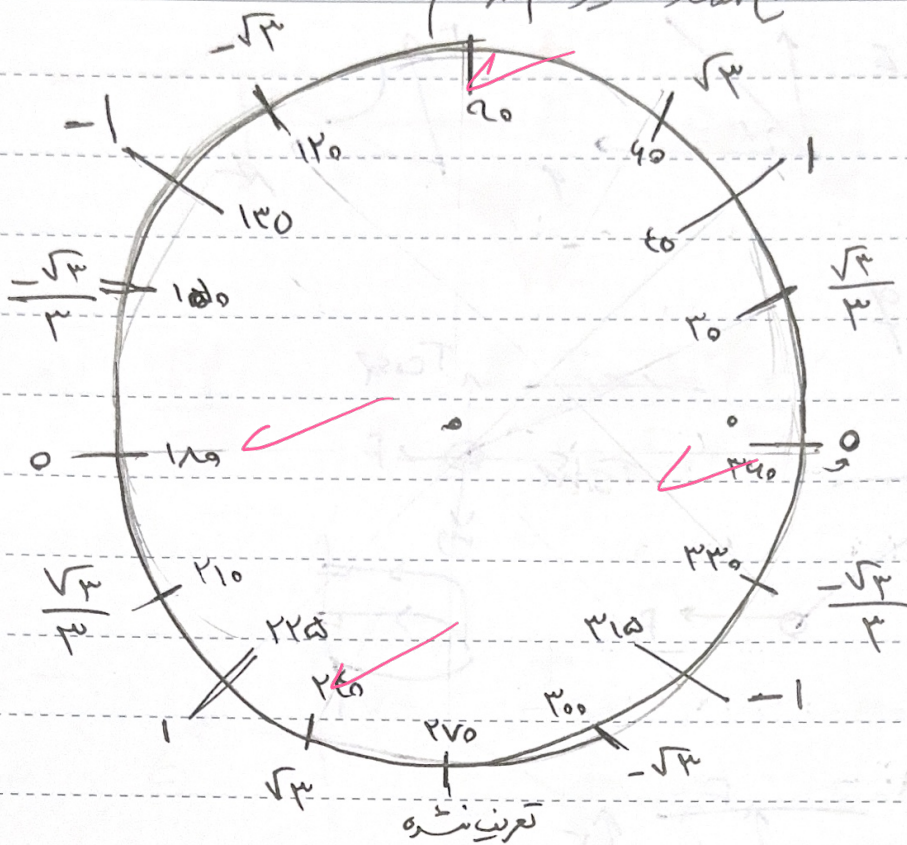


تعریف شده

سرهای راه باز رسم A



$$\sin 10^\circ + \cos 10^\circ + r \tan 10^\circ$$

$$\text{جواب اولی: } \sin \frac{\pi}{4} + \cos \frac{\pi}{4} + r \tan \frac{\pi}{4} =$$

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

$$-\cos 10^\circ + \sin 10^\circ - \sin 10^\circ$$

$$\text{جواب دوم: } -\cos \frac{\pi}{4} + \sin \frac{\pi}{4} - \sin \frac{\pi}{4} =$$

$$-(-\frac{\sqrt{2}}{2}) + \frac{\sqrt{2}}{2} - (\frac{\sqrt{2}}{2}) = \frac{\sqrt{2}}{2}$$

$$G \in \mathbb{R}^n + \mathbb{C} \in \mathbb{R}^n - r \tan 10^\circ$$

$$\text{جواب سومی: } \cos \frac{\pi}{4} + r \cos \frac{\pi}{4} - r \tan \frac{\pi}{4} =$$

$$-\frac{\sqrt{2}}{2} + r(-\frac{\sqrt{2}}{2}) - r(-\frac{\sqrt{2}}{2}) = -\frac{\sqrt{2}}{2}$$

$$\frac{r\sqrt{2}}{2} + \frac{r\sqrt{2}}{2}$$

$$\text{جواب چهارمی: } \cos(\sin \frac{\pi}{4}) + \sin(\pi \cos \frac{\pi}{4})$$

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

$$\sin 10^\circ > r$$

$$\sin 10^\circ > r$$

$$f(n) = \begin{cases} r^n + c & n \geq a \\ r^{n+a} & n < a \end{cases} \Rightarrow n \geq a \Rightarrow a + r = r^n + r$$

$$r^{n+a} = r^n + a$$

$$r^n + a - r = 0 \Rightarrow a = r - r^n$$

$$f(n) = \begin{cases} r^n + c & n \geq a \\ r^{n+a} & n < a \end{cases}$$

$$(a-1)(a+r) = 0 \Rightarrow a = 1$$

$$f(n) = \begin{cases} r^n + b & |n+1| \geq r \\ a + r^n & -r \leq n < 1 \end{cases}$$

$$n = -r \Rightarrow r^n + b = a - r \Rightarrow a + b = r$$

الف) $y = \frac{1}{x^3 - 5x^2}$

$$x^3 - 5x^2 \neq 0$$

$$x^2(x-5) \neq 0 \Rightarrow x \neq 0, 5$$

$$D_f \subset \mathbb{R} - \{0, 5\}$$

(3)

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

$$2x+1 \neq 0 \quad x^2+1 \neq 0 \Rightarrow D_f \subset \mathbb{R} - \{-\frac{1}{2}\}$$

(2)

الف) $y = \sqrt{x^2-1} + \sqrt{x-2} \rightarrow D_f \subset [x, +\infty)$

$$\begin{aligned} & \begin{cases} (x-1)(x+1) \geq 0 & \text{III } x \geq 1 \\ x-2 \geq 0 & \text{II } x \geq 2 \end{cases} \\ & \text{I } x \geq 1 \\ & \text{II } x \geq 2 \end{aligned}$$

$$I \cap II \cap III = \{x \geq 2\}$$

(4)

ب) $y = \frac{\sqrt{4-3x}}{\sqrt{4x-3}} \rightarrow D_f \subset [x, 2]$

$$4-3x \geq 0 \quad x \leq \frac{4}{3} \quad \text{I}$$

$$4x-3 \geq 0 \quad x \geq \frac{3}{4} \quad \text{II}$$

$$I \cap II = \left[\frac{3}{4}, \frac{4}{3}\right]$$

$$\frac{3}{4} \leq x \leq \frac{4}{3}$$

محدود دانستنی دارد

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

$$4x-a \geq 0$$

$$x \geq \frac{a}{4} \quad \text{I}$$

$$b-3x \geq 0$$

$$x \leq \frac{b}{3} \quad \text{II}$$

$$I \cap II = \left[\frac{a}{4}, \frac{b}{3}\right] = \left[\frac{1}{4}, \frac{1}{3}\right]$$

$$\frac{a}{4} = \frac{b}{3} = \frac{1}{4} \Rightarrow a \geq 1, b = 4$$

$$\frac{b}{a} \geq \frac{4}{1} = 4$$

$$\sqrt{c(x-r)} + \sqrt{d(x-r)} \quad \begin{aligned} c=4 & \quad d=3 \\ a=1 & \quad b=4 \end{aligned}$$

الف) $y = \sqrt{x^2 - x - 4} \rightarrow (x-3)(x+2)$
 $\rightarrow x \geq 3, x \leq -2$
 $x^2 - 13x + 24$
 $t^2 - 13t + 24 \rightarrow x^2 = 9$
 $(t-9)(t-4) \rightarrow x = \pm 3$
 $\rightarrow x \geq 3 \rightarrow x = 3$
 $x^2 - x - 4$
 $-3 \quad -2 \quad 2 \quad 3$
 $+ \quad - \quad - \quad +$

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

جمع ضرب = 0 $\rightarrow$ (x+1) جیسے ضرب

ب) $y = \sqrt{x^3 - 2x^2 - 5x + 4} \rightarrow \frac{(x-1)(x+2)(x-3)}{(x+1)(x-2)(x+3)}$
 $x^3 - 2x^2 - 5x + 4 \rightarrow$
 $x^3 - 2x^2 - 5x + 4 \mid x+1$
 $x^3 - x^2 - 4x + 4$
 $x^2 - 4x + 4$
 $x^2 - 4x + 4$
 $+ \quad - \quad - \quad +$

$D_f = (-\infty, -3) \cup [-2, -1) \cup [1, 2) \cup [3, +\infty)$

الف) $y = \sqrt{2[x] - 4}$

$2[x] - 4 \geq 0 \rightarrow [x] \geq 2 \Rightarrow x \geq 2$

$D_f = [2, +\infty)$

ب) $y = \sqrt{2[x] - 5}$

$2[x] - 5 \geq 0 \Rightarrow [x] \geq 2.5 \Rightarrow x \geq 3$

$D_f = [3, +\infty)$

$$y = \sqrt{\frac{(n+1)}{|n-3|}} + \sqrt{\frac{4-n}{n^2+2n+4}} \quad (1.)$$

$$I \Rightarrow \frac{-1}{-1+3} \Rightarrow \frac{-1}{2} \Rightarrow [-1, \infty) - \{3\}$$

$$II \Rightarrow \frac{4}{+1-} \Rightarrow (-\infty, 4]$$

$$Df \downarrow$$

$$I \cap II = [-1, 4] - \{3\}$$

$$= [-1, 3) \cup (3, 4]$$

$$y = \sqrt{\frac{[n]-6}{I}} + \sqrt{\frac{2-[n]}{II}}$$

$$[n] > 6$$

$$I \Rightarrow n > 6$$

$$I \cap II = Df = \emptyset$$

$$II \Rightarrow [n] < 2 \Rightarrow n < 2$$

