

نام و نام خانوادگی کلاس پاسخنانه تشریحی تکلیف شماره یضریضی

$$2x^3 + 3x^2 - 11x + 3 \neq 0 \rightarrow (x-1)(x+3)(2x-1) \neq 0 \rightarrow R = \left\{ \frac{1}{2}, -3, 1 \right\}$$

$\downarrow \quad \downarrow \quad \downarrow$
 $x \neq 1 \quad x \neq -3 \quad x \neq \frac{1}{2}$

ب) $2x^3 + 9x^2 + 10x + 3 \neq 0 \rightarrow (x+1)(2x+1)(x+3) \neq 0$

$\downarrow \quad \downarrow \quad \downarrow$
 $x \neq -1 \quad x \neq -\frac{1}{2} \quad x \neq -3$

$R = \left\{ -1, -\frac{1}{2}, -3 \right\} = D_f$

الف) $\frac{x+3}{x^3 - 2x^2 + 2x - 1} > 0 \rightarrow (x-1)(x^2 - x + 1) > 0$

$\downarrow \quad \downarrow$
 $x \neq 1$ همیشه مثبت

$R = \{1\}$

ب) $\sqrt{\frac{x+3}{x^3 - 2x^2 + 2x - 1}} > 0 \rightarrow x > -3$

$\downarrow$
 $x \neq 1$ همیشه مثبت

$R = (-\infty, -3] \cup (1, \infty)$

$\frac{2}{x^2 - 5|x-1| - 2x + 5} > 0 \rightarrow D_f = R - \{0, 1, 2, 3, 4\}$

$\downarrow$
 $x \neq -3$

$\downarrow$
 $x \neq 2$

$\downarrow$
 $x \neq 4$

$\downarrow$
 $x \neq 0$

الف) $\sqrt{[-x] - 2} > 0 \rightarrow [x] \geq 2 \rightarrow -x \geq 2 \rightarrow x \leq -2$

$R = (-\infty, -2]$

ب) $\frac{5x^2 + 9}{[x]^3 - 2x - 3} \neq 0 \rightarrow ([x] - 3)([x] + 1) \neq 0$

$\downarrow \quad \downarrow$
 $[x] \neq 3 \quad [x] \neq -1$

$[3, 4) \cup (-1, 0) \cup (0, 1) \cup (1, 2) \cup (2, 3) \cup (3, 4) \cup (4, 5) \cup \dots$

الف) $\sqrt{[x - \frac{1}{3}] + [x + \frac{2}{3}]} > 0 \rightarrow 2[x] + 1 > 0 \rightarrow [x] > -\frac{1}{2}$

$\downarrow$
 $[x] \geq 0$

$D = [\frac{1}{3}, +\infty) \leftarrow x - \frac{1}{3} > 0 \rightarrow x > \frac{1}{3}$

ب) $\sqrt{[x - \frac{1}{3}] + [\frac{1}{3} - x]} > 0 \rightarrow [x] + [-x] > 0 \rightarrow D = [\frac{1}{3}, +\infty)$

$\downarrow$
 $\frac{1}{3} = x$

$n - \frac{1}{3}$ باید معتدل به 2 باشد

$[b] + [-b] \rightarrow 0 \checkmark$

$b \in \mathbb{Z} \rightarrow -1 \leq b \leq 1$

اول صفه سید ↓

$$x = \frac{\cos x + 1}{\tan x + 1} = \frac{\cos}{\frac{\sin}{\cos}} \rightarrow \neq 0 \rightarrow kx \neq x$$

$$\downarrow \tan \neq -1 \rightarrow \frac{\pi}{2} + kx$$

$$D = R - \left\{ \frac{kx}{2}, \frac{-x}{2} + kx \right\}$$

(1,0)

ب) $\sqrt{1 - \sin^2 x} \geq 0 \rightarrow \sin^2 x \leq 1 \rightarrow \sin^2 \leq \frac{1}{4} \rightarrow \sin \leq \frac{1}{2} \rightarrow$
 $D_f = [k\pi - \frac{\pi}{6}, k\pi + \frac{\pi}{6}]$ صرا $k\pi \leq k\pi \leq k\pi + \frac{\pi}{6}$ نوشتن؟ $R - \left\{ \frac{\pi}{2}, \frac{3\pi}{2} \right\}$

الف) $y = \sqrt{\sin x - 1} \geq 0 \rightarrow \sin x \geq 1 \rightarrow \sin \geq \frac{1}{2} \rightarrow R - \left\{ kx + \frac{\pi}{2}, kx + \frac{3\pi}{2} \right\}$

ب) $y = \sqrt{1 - \cos x} \geq 0 \rightarrow \cos x \leq 1 \rightarrow \cos x \leq \frac{1}{2} \rightarrow$
 $D = R - \left\{ kx + \frac{\pi}{3}, kx + \frac{5\pi}{3} \right\}$

الف) $x^2 + 3x + 1 \leq 1 \rightarrow x^2 + 3x \leq 0 \rightarrow x(x+3) \leq 0$
 $D = (-3, -2], [-1, 0]$ $\left[\begin{matrix} x = -1 \\ x = -2 \end{matrix} \right]$ بین دو
 ب) $\cos y = \frac{\sqrt{a-2x}}{\sqrt{a-2x}} \leq 1 \rightarrow 2x \geq 4 \rightarrow x \geq 2$
 $\sqrt{a-2x} \geq 0 \rightarrow 2x \leq a \rightarrow x \leq \frac{a}{2}$ $D = [2, \frac{a}{2}]$

الف - 9 $y = \log_r (1 - \log_r^n)$ $\rightarrow \log_r^n \rightarrow n > 0$
 $\rightarrow 1 - \log_r^n > 0 \rightarrow \log_r^n < 1 \rightarrow n < r$ (1,0)

$D_f = (0, r)$

الف) $\sqrt{4x - x^2} - 1 \geq 0 \rightarrow \sqrt{4x - x^2} \geq 1 \rightarrow 4x - x^2 \geq 1 \rightarrow x(4-x) = 1 \rightarrow x = 1$
 $4x - x^2 - 1 \geq 0 \rightarrow x^2 - 4x + 1 \leq 0$ $1 \leq x \leq 3$
 $D = [1, 3]$ باید مصادق کنی (1,0)

ب) $\left(\frac{3x+a}{2x+1} \right) ! \rightarrow 2x+a = 2x+1 \rightarrow 2x+2x = -a+2 \rightarrow$
 $D = \left\{ x \mid x = \frac{-a-2}{4}, k \in \mathbb{N} \right\} \leftarrow x = \frac{-a+2}{2x+1-2x}$

$$\omega - \text{ب}) \quad \left\lceil n - \frac{1}{r} \right\rceil + \left\lceil -n + \frac{1}{r} \right\rceil \geq 0$$

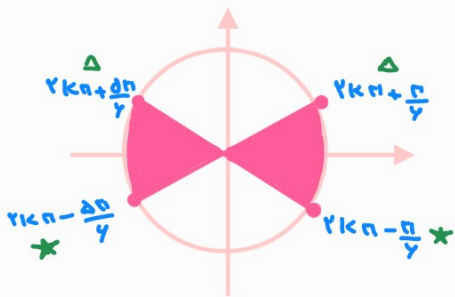
مردانیم:

$$\begin{aligned} \lceil n \rceil + \lceil -n \rceil &\rightarrow n \in \mathbb{Z} \quad 0 \checkmark \\ &\rightarrow n \notin \mathbb{Z} \quad -1 \times \end{aligned}$$

$$\rightarrow \left\lceil n - \frac{1}{r} \right\rceil \in \mathbb{Z} \rightarrow n \in \mathbb{Z} + \frac{1}{r}$$

$$D_f = \left\{ n \mid n = k + \frac{1}{r}, k \in \mathbb{Z} \right\}$$

$$4 - \text{ب}) \quad 1 - r \sin^2 n \geq 0 \rightarrow r \sin^2 n \leq 1 \rightarrow \sin^2 n \leq \frac{1}{r} \rightarrow -\frac{1}{r} \leq \sin n \leq \frac{1}{r}$$



$$\rightarrow D_f = \left[k\pi - \frac{\pi}{r}, k\pi + \frac{\pi}{r} \right]$$

$$9 - \text{ب}) \quad y = \log_r \left(1 - \log \frac{n}{r} \right) \rightarrow \log \frac{n}{r} \rightarrow n > 0$$

$$\rightarrow 1 - \log \frac{n}{r} > 0 \rightarrow \log \frac{n}{r} < 1 \xrightarrow{\text{مناسب}} n > \frac{1}{r}$$

$$D_f = \left(\frac{1}{r}, +\infty \right)$$

$$10 - \text{الف}) \quad \frac{r_{n-n^2}}{2} - 1 \geq 0 \rightarrow \frac{r_{n-n^2}}{2} \geq 1 \rightarrow r_{n-n^2} \geq 2 \rightarrow$$

$$n^2 - 2n + 2 \leq 0 \rightarrow (n-1)(n-2) \leq 0 \quad \begin{array}{c} 1 \quad 2 \\ + \quad - \quad + \end{array} \rightarrow D_f = [1, 2]$$