

$$\begin{array}{r} -) \quad \frac{r_n^r + q_n^r + l_n + r}{-r_n^r + r_n^r} \quad \frac{(n+1)}{r_n^r + v_n + r} \\ \hline \quad \quad \quad \frac{v_n^r + l_n}{-v_n^r + v_n} \\ \hline \quad \quad \quad \frac{r_n + r}{-r_n + r} \\ \hline \end{array} \quad \begin{array}{r} \frac{(n+1)}{r_n^r + v_n + r} \\ \hline \frac{-v + \sqrt{v^2 + a}}{a} \end{array} \quad \begin{array}{r} -\frac{1}{r} \\ \hline -r \end{array}$$

$$r_n + 9r_{n+1} + r_{n+2} = (n+1)(n + \frac{1}{r})(n+r) \Rightarrow$$

$$D_f = (-\infty, -\frac{1}{2}] \cup (1, +\infty)$$

$$D_f = \mathbb{R} - \{1\}$$

$$\left. \begin{aligned} x > 1 & \quad \frac{r}{x^r - vx + 1} = \frac{r}{(x-1)(x-r)} \\ x = 1 & \quad \frac{r}{r} \\ x < 1 & \quad \frac{r}{x^r + rx} = \frac{r}{x(x+r)} \end{aligned} \right\} D_f = \mathbb{R} - \{-r, 0, r, \infty\}$$

$\hookrightarrow \frac{\Delta n^r + 1}{([n] - r)([n] + 1)} \Rightarrow [n] = -1 \rightarrow -1 \leq n < 0 \quad [n] = r \rightarrow r \leq n < r+1$

$$D_f = \mathbb{R} \setminus \{ -1, 0 \} \cup [r, \infty) \quad \text{D}$$

الف) $[x - \frac{1}{r}] + [x + \frac{r}{r}] \geq 0 \Rightarrow +1 \Rightarrow 2[x + \frac{r}{r}] \geq 1 \rightarrow [x + \frac{r}{r}] \geq \frac{1}{2} \Rightarrow [x + \frac{r}{r}] \geq 1 \Rightarrow x + \frac{r}{r} \geq 1 \rightarrow x \geq \frac{1}{r}$
 $D_f = [\frac{1}{r}, +\infty)$

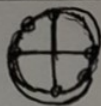
$$\hookrightarrow [n - \frac{1}{r}] + [\frac{1}{r} - n] \geq 0 \Rightarrow$$

$$n - \frac{1}{r} \in \mathbb{Z} \quad n \in \mathbb{Z} + \frac{1}{r}$$

$$\mathbb{D}_f = \{x | x = k + \frac{1}{p}, k \in \mathbb{Z}\}$$

$$\text{الف) } \tan x \neq -1 \Rightarrow D_f = \mathbb{R} - \left\{ K\pi + \frac{\pi}{4}, \frac{5\pi}{4} \right\}$$

$$\cot x \Rightarrow \text{باید تعریف شده باشد} \quad \tan x \Rightarrow \text{باید تعریف شده باشد}$$



$$\text{ب) } 1 - (\sin^2 x) \geq 0 \Rightarrow \sin^2 x \leq \frac{1}{4} \Rightarrow -\frac{1}{2} \leq \sin x \leq \frac{1}{2}$$

$$D_f = \left[K\pi - \frac{\pi}{6}, K\pi + \frac{\pi}{6} \right]$$



6

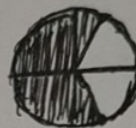
$$\text{الف) } 2 \sin x - 1 \geq 0 \Rightarrow \sin x \geq \frac{1}{2}$$

$$D_f = \left[2K\pi + \frac{\pi}{6}, 2K\pi + \frac{5\pi}{6} \right]$$



$$\text{ب) } 1 - 2 \cos x \geq 0 \Rightarrow \cos x \leq \frac{1}{2}$$

$$D_f = \left[2K\pi + \frac{\pi}{3}, 2K\pi + \frac{5\pi}{3} \right]$$



به انتهای بازه باید از اول بازه بزرگتر باشد!

1, 5

7

$$\text{الف) } -1 \leq x^2 + 2x + 1 \leq 1 \rightarrow \begin{cases} x^2 + 2x \leq 0 \rightarrow x(x+2) \leq 0 \quad (1) \rightarrow \frac{-2}{+2-2+} \\ x^2 + 2x + 2 \geq 0 \rightarrow (x+1)(x+2) \geq 0 \quad (2) \rightarrow \frac{-2}{+2-2+} \end{cases} \Rightarrow [-2, -1] \cup [-1, 0]$$

$$\text{ب) } -1 \leq \sqrt{2-x} \leq 1 \rightarrow \begin{cases} 2-x \leq 1 \Rightarrow x \geq 1 \quad (1) \\ 2-x \geq 0 \Rightarrow x \leq \frac{4}{2} \quad (2) \end{cases} \Rightarrow 1 \leq x \leq \frac{4}{2} \Rightarrow \left[1, \frac{4}{2} \right]$$

8

$$\text{الف) } 1 - \log_2 x > 0 \Rightarrow \log_2 x < 1 \rightarrow x < 2 \quad \text{و} \quad x > 0 \Rightarrow 0 < x < 2 \Rightarrow (0, 2)$$

$$\text{ب) } 1 - \log_{\frac{1}{2}} x > 0 \Rightarrow \log_{\frac{1}{2}} x < 1 \rightarrow x > \frac{1}{2} \quad \text{و} \quad x > 0 \Rightarrow \left(\frac{1}{2}, +\infty \right)$$

9

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

$$\Rightarrow D_f = [1, 2]$$

$$\text{ب) } \frac{x^2 + a}{x^2 + b} \in \mathbb{W} \Rightarrow x \in \left[\frac{a-b}{b-a}, \frac{a-b}{b-a} \right] \rightarrow \{x \mid x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}, x \in \mathbb{W}\}$$

10

$\text{ب-} \quad 1 - r_c \cos \theta \geq 0 \rightarrow \cos \theta \leq \frac{1}{r_c} \rightarrow \text{Def} \left[r_c \cos \theta + \frac{\pi}{r_c}, r_c \cos \theta + \frac{2\pi}{r_c} \right]$

