

..... پاسخنامه تشریحی تکلیف شماره ...
۱۹۵
انبار

۲

1

৫

1

三

→ $D = C$

פ

כ

△

الف) $\cot \theta = \frac{\cos \theta}{\sin \theta} \Rightarrow \sin \theta \neq 0$
 $\tan \theta + 1 \neq 0 \rightarrow \tan \theta \neq -1, \tan \theta = \frac{\sin \theta}{\cos \theta} \rightarrow \cos \theta \neq 0$
 $\hookrightarrow D = \mathbb{R} - \{K\pi, K\pi + \frac{\pi}{4}, K\pi - \frac{\pi}{4}\}$



ب) $1 - \sqrt{\sin^2 \theta} \geq 0 \rightarrow \sqrt{\sin^2 \theta} \leq 1 \rightarrow -\frac{1}{\sqrt{e}} \leq \sin \theta \leq \frac{1}{\sqrt{e}}$
 $\hookrightarrow D = [K\pi - \frac{\pi}{\sqrt{e}}, K\pi + \frac{\pi}{\sqrt{e}}] \cup [K\pi + \frac{\pi}{\sqrt{e}}, K\pi + \frac{2\pi}{\sqrt{e}}]$



الف) $\sqrt{\sin \theta} - 1 \geq 0 \rightarrow \sin \theta \geq \frac{1}{e} \rightarrow D = [K\pi + \frac{\pi}{\sqrt{e}}, K\pi + \frac{2\pi}{\sqrt{e}}]$



ب) $1 - \sqrt{\cos \theta} \geq 0 \rightarrow \cos \theta \leq \frac{1}{e} \rightarrow D = [K\pi + \frac{\pi}{\sqrt{e}}, K\pi + \frac{2\pi}{\sqrt{e}}]$



الف) $-1 \leq x^2 + 3x + 1 \leq 1$
 $\hookrightarrow \textcircled{1} \cap \textcircled{2} \Rightarrow D = [-2, -1]$
 $D_f = [-2, -1] \cup [1, 2]$

ب) $\omega - \sqrt{x} \geq 0 \rightarrow \omega \geq \sqrt{x} \rightarrow x \leq \omega^2 \textcircled{1}$
 $\hookrightarrow -1 \leq \sqrt{\omega - x} \leq 1 \rightarrow \omega - x \leq 1 \rightarrow x \geq \omega - 1 \rightarrow x \leq \omega \textcircled{2}$
 $\Rightarrow \textcircled{1} \cap \textcircled{2} \Rightarrow D = [\omega - 1, \omega]$

الف) $x > 0 \textcircled{1}$
 $1 - \log_{\frac{1}{x}} x > 0 \rightarrow \log_{\frac{1}{x}} x < 1 \xrightarrow{1 < x} x < \frac{1}{x} \textcircled{2}$
 $\Rightarrow \textcircled{1} \cap \textcircled{2} \Rightarrow D = (0, \frac{1}{2})$

ب) $x > 0 \textcircled{1}$
 $1 - \log_{\frac{1}{x}} x > 0 \rightarrow \log_{\frac{1}{x}} x < 1 \xrightarrow{0 < \frac{1}{x} < 1} x > 1 \textcircled{2}$
 $\Rightarrow \textcircled{1} \cap \textcircled{2} \Rightarrow D = (1, +\infty)$
 $D_f = (\frac{1}{2}, +\infty)$

الف) $x^{2n} - x^n > 0 \rightarrow x^{2n} > x^n \rightarrow x^{2n} - x^n > 0 \rightarrow x^n(x^n - 1) > 0 \rightarrow x^n > 1 \rightarrow x > 1$
 $\hookrightarrow D = [1, 2]$

ب) $\frac{x^n + \omega}{x^n + x} \in W \rightarrow x \in -\frac{x\omega - \omega}{x\omega - x} \rightarrow D = \{x \mid x = \frac{-xK + \omega}{xK - x}, K \in W\}$

$$8 - \text{الف} - 1 \leq x^r + \frac{r}{r} \stackrel{\sim}{\rightarrow} \frac{q}{\varepsilon} - \frac{\Delta}{\varepsilon} \leq 1 \rightarrow -1 \leq x^r + \frac{r}{r} + \frac{q}{\varepsilon} - \frac{\Delta}{\varepsilon} \leq 1$$

$$\frac{1}{\varepsilon} \leq x^r + \frac{r}{r} + \frac{q}{\varepsilon} \leq \frac{q}{\varepsilon} \rightarrow \frac{1}{\varepsilon} \leq (n + \frac{r}{r})^r \leq \frac{q}{\varepsilon}$$

$$\int (n + \frac{r}{r})^r \leq \frac{q}{\varepsilon} \rightarrow -\frac{r}{r} \leq n + \frac{r}{r} \leq \frac{r}{r} \rightarrow -r \leq n \leq 0 \quad I$$

$$\int (n + \frac{r}{r})^r \geq \frac{1}{\varepsilon} \rightarrow n + \frac{r}{r} \geq \frac{1}{r} \rightarrow n \geq -1 \quad \text{و} \quad n + \frac{r}{r} \leq -\frac{1}{r} \rightarrow n \leq -r \quad II$$

$$I \cap II \rightarrow Df = [-r, -r] \cup [-1, 0]$$

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

$$\hookrightarrow 1 - \log \frac{n}{r} > 0 \rightarrow \log \frac{n}{r} < 1 \xrightarrow{\text{مناسبة (1,0)}} n > \frac{1}{r}$$

$$Df = (\frac{1}{r}, +\infty)$$