

الف) $\sqrt{\sin x} - 1 \geq 0 \quad \sqrt{\sin x} \geq 1 \quad \sin x \geq \frac{1}{4} \quad \sin x \geq 30^\circ, 150^\circ$ 

$D_f = [2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}]$ (P) ✓

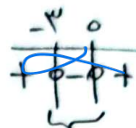
ب) $\cos x - 1 \geq 0 \quad \cos x \geq 1 \quad D_f = \{2k\pi\}$

لکه می‌تواند از یک داریم پس فقط مساوی (یعنی همان)

الف) $\cos y = |x| - 3 \rightarrow -1 \leq |x| - 3 \leq 1 \quad 2 \leq |x| \leq 4 \quad \begin{cases} 2 \leq x \leq 4 \\ -2 \geq x \geq -4 \end{cases}$

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

ب) $-1 \leq x^2 + 3x + 1 \leq 1 \rightarrow -2 \leq x(x+3) \leq 0$



$-2 \leq x(x+3) \xrightarrow{x=-2} -2(-2+3) = -2$ و این صفت بین

$\xrightarrow{x=-3} -3(-3+3) = 0$ $D_f = [-2, 0] + \{-3\}$

الف) $2 - \log_3(x-2) \geq 0 \quad \log_3(x-2) \leq 2 \quad (x-2) \leq 3^2 \quad x \leq 11$

$x-2 > 0 \quad x > 2 \quad D_f = (2, 11]$ (P) ✓

ب) $\log(x^3 - x)$ $x^3 - x > 0$ $x(x^2 - 1) > 0$ $x \neq \pm 1$



$D_f = (-1, 0) \cup (1, +\infty)$

الف) $f^x + 1 \neq 0$ $D_f = \mathbb{R}$

ب) $f^x - 1 \neq 0 \quad f^x \neq 1 \quad x \neq 0 \quad D_f = \mathbb{R} - \{0\}$ (P) ✓

ج) $f^x - 2 \neq 0 \quad f^x \neq 2 \quad \log_f^2 \neq x \quad D_f = \mathbb{R} - \{\log_f^2\}$

د) $f^x - 3 \neq 0 \quad f^x \neq 3 \quad x \neq \log_f^3 \quad D_f = \mathbb{R} - \{\log_f^3\}$

الف) $f_{x+1} \in W \quad f_x \in W-1 \quad x \in \frac{W-1}{f}$

$D_f = \{x | x = \frac{k-1}{f}, k \in W\}$

ب) $\frac{f^x - 1}{f^x - f} \in W \quad x = \frac{-\omega W + 1}{f^x - f} = \frac{+\omega W - 1}{+f^x - f}$ (P) ✓

$D_f = \{x | x = \frac{\omega k - 1}{f^k - f}, k \in W\}$

$$\hookrightarrow 9x^2 + 2x + 1 \geq 0 \rightarrow \frac{-2 \quad -1}{+ \quad - \quad +}$$

$$9x^2 + 2x \leq 0 \rightarrow \frac{-2 \quad 0}{+ \quad - \quad +} \quad \mathcal{D}_g = [-2, -2] \cup [-1, 0]$$