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الف) $x(x-4) \geq 0$ $\rightarrow x(x^2-1) > 0$ $\rightarrow x(x-1)(x+1) > 0$

ب) $x(x-4) \geq 0$ $\rightarrow x(x^2-1) > 0$ $\rightarrow x(x-1)(x+1) > 0$

$D_f = (-1, 0) \cup (0, 1) \cup [4, +\infty)$

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الف) $x + |x| > 0 \rightarrow |x| > -x \rightarrow -|x| < x \rightarrow D_f = (0, +\infty)$

ب) $x|x| > 0 \rightarrow D_f = (0, +\infty)$

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الف) $2 - [x] \geq 0 \rightarrow -[x] \geq -2 \rightarrow [x] \leq 2 \rightarrow D_f = (-\infty, 3)$

ب) $2 - [x] > 0 \rightarrow -[x] > -2 \rightarrow [x] > 2 \rightarrow D_f = (-\infty, 2)$

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الف) $[x + \frac{1}{x} - \frac{1}{x}] + [x + \frac{1}{x}] \geq 0 \rightarrow [x + \frac{1}{x}] - 1 + [x + \frac{1}{x}] \geq 0$

ب) $[x - \frac{1}{x}] + [- (x - \frac{1}{x})] \geq 0$

$a \in \mathbb{Z} \rightarrow [a] + [-a] \geq 0$ $x - \frac{1}{x} \in \mathbb{Z}$ $x + \frac{1}{x} \geq 1 \rightarrow x \geq 1 - \frac{1}{x}$

$a \notin \mathbb{Z} \rightarrow [a] + [-a] \geq -1$ $\{x | x = k + \frac{1}{x}, k \in \mathbb{Z}\}$ $x \geq \frac{1}{x}$

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الف) $\sin x - 1 \neq 0 \rightarrow \sin x \neq 1$ $D_f = \mathbb{R} - \{2k\pi + \frac{\pi}{2}\}$

ب) $2 \sin^2 x - 1 \neq 0 \rightarrow \sin^2 x \neq \frac{1}{2} \rightarrow \sin x \neq \pm \frac{1}{\sqrt{2}}$

$D_f = \mathbb{R} - \{2k\pi + \frac{\pi}{4}, 2k\pi + \frac{3\pi}{4}\}$

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$\frac{k\pi}{2} + \frac{\pi}{4}$

باید یازده بلی ← 

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

$D_f = IR - \left\{ 2k\pi + \frac{\pi}{6}, \cancel{2k\pi + \frac{\pi}{4}}, \cancel{2k\pi + \frac{\pi}{2}}, 2k\pi + \frac{5\pi}{6} \right\} \rightarrow 0 \leq x \leq 2\pi$
 $[2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}]$

ب) $\cos x - 1 \geq 0 \rightarrow \cos x \geq 1$
 $\rightarrow 0 \leq x \leq 2\pi$

$D_f = IR - \{2k\pi\}$



الف) $-1 \leq |x| - 3 \leq 1 \rightarrow |x| \leq 4$
 $2 \leq |x| \leq 4$

1, 2, 3

$x \in [-4, -2] \cup [2, 4]$

ب) $-1 \leq x^2 + 3x + 1 \leq 1$ باید جدول بنویس علامت بگیری

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

$x(x+3) \leq 0$ $D_f = [-3, -2] \cup [-1, 0]$

الف) $2 - \log_3(x-2) \geq 0 \rightarrow -\log_3(x-2) \geq -2 \rightarrow \log_3(x-2) \leq 2$

$x-2 \leq 9 \rightarrow x \leq 11$ $(2, 11]$

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

$(x-1)(x+1) > 0$

$D_f = (-1, 0) \cup (1, 9)$

الف) $x^n + 1 \neq 0 \rightarrow x^n \neq -1 \rightarrow IR$

ب) $x^n - 1 \neq 0 \rightarrow x^n \neq 1 \rightarrow IR - \{0\}$

ج) $x^n - 2 \neq 0 \rightarrow x^n \neq 2 \rightarrow x^n \neq 2^1 \rightarrow x^n = 1 \rightarrow x = \frac{1}{x}$

د) $x^n - 3 \neq 0 \rightarrow x^n \neq 3 \rightarrow$ دامنه تمام اعداد حقیقی

الف) $x_{n+1} \in W \rightarrow x_n \in W - 1 \rightarrow x \in \frac{W-1}{F} \rightarrow \{x | x = \frac{k-1}{F}, k \in W\}$

ب) $\frac{x_n - 2}{x_n - 3} \in W \rightarrow x_n - 2 \in x_n W - 3W \rightarrow x = \frac{-3W + 2}{x_n - 3} = \frac{3W - 2}{x_n - 3}$

$D_f = \{x | x = \frac{3k - 2}{-3 + x_k}, k \in W\}$