

(الف) $\frac{x^2-4}{x^3-x} \gg 0 \rightarrow \frac{x(x-4)}{x(x-1)} \gg 0$

$$c) \frac{x^0 - x^1}{x^1 - x^2} \geq 0 \rightarrow \frac{x^1(x^1 - 1)}{x^1(x^1 - 1)} \geq 0 \quad \text{with } x^1 \neq 0$$

ج) $u + |u\rangle_0 \rightarrow |u\rangle - u \rightarrow D_f = R^+ \underline{1} (0, +\infty)$

$\begin{matrix} +\sqrt{1} \\ -\sqrt{1} \\ 0 \times \end{matrix}$

د) $u |u\rangle_0 \rightarrow \begin{matrix} +\sqrt{1} \\ -\sqrt{1} \\ 0 \times \end{matrix} \rightarrow D_f = R^+ \underline{1} (0, +\infty)$

$\begin{matrix} +\sqrt{1} \\ -\sqrt{1} \\ 0 \times \end{matrix}$

(ب) $\vdash [x] \gg 0 \rightarrow [x] \leq 2 \rightarrow x < 3 \rightarrow D_f = (-\infty, 3)$

ب) $L[u] = 0 \rightarrow [u] \in \mathcal{V} \rightarrow u \in \mathcal{V} \rightarrow Df = (-\infty, 1)$

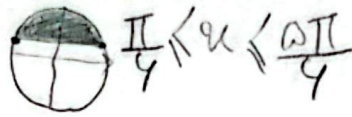
ا) $\lfloor x - \frac{1}{p} \rfloor + \lfloor x + \frac{1}{p} \rfloor \geq 0 \rightarrow \lfloor x + \frac{1}{p} - 1 \rfloor + \lfloor x + \frac{1}{p} \rfloor \geq 0 \rightarrow \lfloor x + \frac{1}{p} \rfloor - 1 + \lfloor x + \frac{1}{p} \rfloor \geq 0$
 $\rightarrow 2 \lfloor x + \frac{1}{p} \rfloor \geq 1 \rightarrow \lfloor x + \frac{1}{p} \rfloor \geq \frac{1}{p} \rightarrow x + \frac{1}{p} \geq 1 \rightarrow x \geq \frac{1}{p} \rightarrow D_f = [\frac{1}{p}, +\infty)$
 ب) $\lfloor x - \frac{1}{p} \rfloor + \lfloor -x + \frac{1}{p} \rfloor \geq 0 \stackrel{!}{\Leftrightarrow} a \in \mathbb{Z} \quad [a] + [-a] = 0 \rightarrow x - \frac{1}{p} \in \mathbb{Z} \rightarrow$
 $a \notin \mathbb{Z} \quad [a] + [-a] = -1 \times$
 $D_f = \{x \mid x = \frac{1}{p} + n, n \in \mathbb{Z}\}$

ج) $\sin x - 1 \neq 0 \rightarrow \sin x \neq 1$  $D_f = \mathbb{R} - \left\{ \left(\frac{1}{2} \right) \pi + \frac{\pi}{2} \right\}$

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

$$D_f = R - \left\{ \frac{K\pi}{r} + \frac{\pi}{r} \right\}$$

ا) $1 - \sin x \geq 0 \rightarrow \sin x \leq 1$
 $\rightarrow D_f = [2k\pi + \frac{\pi}{2}, 2k\pi + \frac{3\pi}{2}]$



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



✓

ا) $-1 \leq |x-1| \leq 1 \rightarrow |x-1| \leq 1 \rightarrow |x| \leq 2 \rightarrow -2 \leq x \leq 2$
 $|x-1| \geq -1 \rightarrow |x| \geq 2 \rightarrow x \geq 2 \text{ or } x \leq -2$

$D_f = [-2, -1] \cup [1, 2]$

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

ا) $x^2 > 0 \rightarrow x \neq 0$
 $2 - \log_2(x-1) \geq 0 \rightarrow \log_2(x-1) \leq 2 \rightarrow x-1 \leq 4 \rightarrow x \leq 5$

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

$D_f = (2, 11]$ $x \leq 11$

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

ا) $x^x + 1 \neq 0 \rightarrow x^x \neq -1 \rightarrow D_f = \mathbb{R}$

ب) $x^x - 1 \neq 0 \rightarrow x^x \neq 1 \rightarrow x \neq 0 \rightarrow D_f = \mathbb{R} - \{0\}$

ج) $x^x - 2 \neq 0 \rightarrow x^x \neq 2 \rightarrow x \neq \log_2^x \rightarrow D_f = \mathbb{R} - \{\log_2^x\}$

د) $x^x - 3 \neq 0 \rightarrow x^x \neq 3 \rightarrow x \neq \log_3^x \rightarrow D_f = \mathbb{R} - \{\log_3^x\}$

ا) $kx + 1 \in \mathbb{W} \rightarrow kx \in \mathbb{W} - 1 \rightarrow x \in \frac{\mathbb{W} - 1}{k} \rightarrow D_f = \{x | x = \frac{k-1}{k}, k \in \mathbb{W}\}$

ب) $\frac{kx-1}{kx-2} \in \mathbb{W} \rightarrow kx-1 = kwx-2w \rightarrow kx-1 = kwx-2w$
 $x = \frac{1-2w}{k-2w} \rightarrow D_f = \{x | x = \frac{\Delta k - 1}{k - 2}, k \in \mathbb{W}\}$