

الف) $y = \sqrt{\frac{x^2 - 6x}{x^3 - x}} \rightarrow \sqrt{\frac{x(x-6)}{x(x^2-1)}}$ $\rightarrow D_f = (-1, 0) \cup (0, 1) \cup [6, +\infty)$

ب) $y = \sqrt{\frac{x^5 - x^3}{x^3 - x}} = \sqrt{\frac{x^3(x^2-1)}{x(x^2-1)}}$ $\rightarrow D_f = \mathbb{R} - \{-1, 0, 1\}$

الف) $y = \frac{x+1}{\sqrt{x+|x|}}$ $\ominus \rightarrow \times$
 $\circ \rightarrow \times$
 $\oplus \rightarrow \checkmark$ $\rightarrow D_f = (0, +\infty)$ $\underline{\text{ب}} \rightarrow D_f = \mathbb{R} - (-\infty, 0]$

ب) $y = \frac{1}{\sqrt{x|x|}}$ $\ominus \rightarrow \times$
 $\circ \rightarrow \times$
 $\oplus \rightarrow \checkmark$ $\rightarrow D_f = (0, +\infty)$

الف) $y = \sqrt{2 - [x]} \rightarrow 2 - [x] \geq 0 \rightarrow [x] \leq 2 \rightarrow x < 3 \rightarrow D_f = (-\infty, 3)$

ب) $y = \frac{1}{\sqrt{2 - [x]}}$ $\rightarrow 2 - [x] > 0 \rightarrow [x] < 2 \rightarrow x < 2 \rightarrow D_f = (-\infty, 2)$

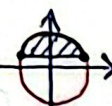
الف) $y = \sqrt{\left[x - \frac{1}{3}\right] + \left[x + \frac{2}{3}\right]} \rightarrow \left[x - \frac{1}{3}\right] + \left[x + \frac{2}{3}\right] \geq 0 \rightarrow \left[x + \frac{2}{3} - 1\right] + \left[x + \frac{2}{3}\right] \geq 0$
 $\rightarrow \left[x + \frac{2}{3}\right] - 1 + \left[x + \frac{2}{3}\right] \geq 0 \rightarrow 2\left[x + \frac{2}{3}\right] \geq 1 \rightarrow \left[x + \frac{2}{3}\right] \geq \frac{1}{2} \rightarrow x + \frac{2}{3} \geq 1 \rightarrow x \geq \frac{1}{3}$

ب) $y = \sqrt{\left[x - \frac{1}{3}\right] + \left[-x + \frac{1}{3}\right]} \rightarrow \sqrt{\left[x - \frac{1}{3}\right] + \left[-\left(x - \frac{1}{3}\right)\right]} \rightarrow \begin{cases} a \in \mathbb{Z} \rightarrow [a] + [-a] = 0 \\ a \notin \mathbb{Z} \rightarrow [a] + [-a] = -1 \end{cases}$ $D_f = \left[\frac{1}{3}, +\infty\right)$
 $\rightarrow x - \frac{1}{3} \in \mathbb{Z} \rightarrow D_f = \left\{x \mid x = k + \frac{1}{3}, k \in \mathbb{Z}\right\}$

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

ب) $y = \frac{3}{2\sin^2 x - 1} \rightarrow 2\sin^2 x - 1 \neq 0 \rightarrow 2\sin^2 x \neq 1 \rightarrow \sin^2 x \neq \frac{1}{2} \rightarrow \sin x \neq \pm \frac{1}{\sqrt{2}}$
 $\rightarrow \pm \frac{1}{\sqrt{2}} \xrightarrow{\times \frac{\sqrt{2}}{\sqrt{2}}} \pm \frac{\sqrt{2}}{2}$ $D_f = \mathbb{R} - \left\{\frac{k\pi}{4} + \frac{\pi}{4}\right\}$

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

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

ب) $y = \sqrt{\cos x - 1} \rightarrow \cos x - 1 \geq 0 \rightarrow \cos x \geq 1$

 $D_f = \{2K\pi\}$

الف) $\cos y = |x| - 3 \rightarrow -1 \leq |x| - 3 \leq 1 \rightarrow 2 \leq |x| \leq 4$
 $\rightarrow D_f = [-4, -2] \cup [2, 4]$

ب) $y = \arcsin(x^2 + 3x + 1) \rightarrow -1 \leq x^2 + 3x + 1 \leq 1$

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

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

①

x	-2	-1
y	+	-

اشتراك او $D_f = [-3, -2] \cup [-1, 0]$

الف) $y = \sqrt{2 - \log_p(x-2)} \rightarrow x-2 > 0 \rightarrow x > 2$
 $2 - \log_p(x-2) \geq 0 \rightarrow \log_p(x-2) \leq 2 \rightarrow x-2 \leq 9 \rightarrow x \leq 11$
 $D_f = (2, 11]$

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

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

الف) $y = \frac{3}{f^x + 1} \rightarrow f^x + 1 \neq 0 \rightarrow f^x \neq -1 \rightarrow D_f = \mathbb{R}$

ب) $y = \frac{3}{f^x - 1} \rightarrow f^x - 1 \neq 0 \rightarrow f^x \neq 1 \rightarrow x \neq 0 \rightarrow D_f = \mathbb{R} - \{0\}$

ج) $y = \frac{3}{f^x - 2} \rightarrow f^x - 2 \neq 0 \rightarrow f^x \neq 2 \rightarrow x \neq \log_f 2 \rightarrow D_f = \mathbb{R} - \{\log_f 2\}$

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

الف) $y = (f^x + 1)! \rightarrow f^x + 1 \in \mathbb{W} \rightarrow f^x \in \mathbb{W} - 1 \rightarrow x \in \frac{\mathbb{W} - 1}{f}$

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

ب) $y = \left(\frac{3x-2}{2x-5}\right)! \rightarrow \frac{3x-2}{2x-5} \in \mathbb{W} \rightarrow 3x-2 \in \mathbb{W}(2x-5)$

$\frac{3x-2}{2x-5} \in \mathbb{W} \rightarrow \frac{-5\mathbb{W}-2}{2\mathbb{W}-3}$

$\rightarrow D_f = \{x | x = \frac{y-5k}{3-2k}, k \in \mathbb{W}\}$

$3x-2 \in \mathbb{W}(2x-5) \rightarrow \frac{x(3-2\mathbb{W})}{3-2\mathbb{W}} \in \mathbb{W}$

$\rightarrow x \in \frac{y-5\mathbb{W}}{3-2\mathbb{W}} \rightarrow D_f = \{x | x = \frac{y-5k}{3-2k}, k \in \mathbb{W}\}$