

الف) $2\cos x + 1 \neq 0 \Rightarrow \cos x \neq -\frac{1}{2} \Rightarrow \bigcirc \rightarrow D_p = \mathbb{R} - \left\{ \frac{\pi}{3} + 2k\pi, \frac{5\pi}{3} + 2k\pi \right\}$

ب) $\cos x \neq 1 \rightarrow \bigoplus \Rightarrow D_p = \mathbb{R} - \{2k\pi\}$ ۲ ✓

الف) $\begin{cases} \tan x + 1 \neq 0 \rightarrow \tan x \neq -1 \rightarrow \bigotimes \\ \sin x \neq 0 \rightarrow \bigoplus \end{cases} \Rightarrow D_p = \mathbb{R} - \left\{ k\pi, k\pi - \frac{\pi}{2} \right\}$

ب) $\begin{cases} \cot x - 1 \neq 0 \rightarrow \cot x \neq 1 \rightarrow \bigoplus \\ \sin x \neq 0 \rightarrow \bigoplus \end{cases} \Rightarrow D_p = \mathbb{R} - \left\{ k\pi + \frac{\pi}{4}, k\pi + \frac{5\pi}{4} \right\}$ ۱/۵ ✓

الف) $-1 \leq \sin y \leq 1 \Rightarrow -1 \leq x^2 - 4 \leq 1 \Rightarrow 1 \leq x^2 \leq 5 \Rightarrow 1 \leq |x| \leq \sqrt{5}$
 $\Rightarrow 1 \leq x \leq \sqrt{5} \cup -1 \geq x \geq -\sqrt{5} \Rightarrow D_p = [1, \sqrt{5}] \cup [-\sqrt{5}, -1]$

ب) $-1 \leq \sqrt{x} - 2 \leq 1 \Rightarrow 1 \leq \sqrt{x} \leq 3 \Rightarrow 1 \leq x \leq 9 \Rightarrow D_p = [1, 9]$ ۲ ✓

الف) $-1 \leq |x| - 3 \leq 1 \Rightarrow 2 \leq |x| \leq 4 \Rightarrow 2 \leq x \leq 4 \cup -4 \leq x \leq -2$
 $\Rightarrow D_p = [2, 4] \cup [-4, -2]$ ۲ ✓

ب) $-1 \leq x^2 + 4x + 1 \leq 1 \Rightarrow 0 \leq x^2 + 4x + 2 \leq 2 \Rightarrow 0 \leq (x+1)(x+3) \leq 2$
 $\Rightarrow \begin{cases} 0 \leq (x+1)(x+3) \\ x(x+4) \leq 0 \end{cases} \Rightarrow D_p = [-3, -1] \cup [-4, 0]$

الف) $x^2 - 4 > 0 \Rightarrow x^2 > 4 \Rightarrow x > 2 \cup x < -2 \Rightarrow D_p = (2, +\infty) \cup (-\infty, -2)$

ب) $2 - |x| > 0 \Rightarrow |x| < 2 \Rightarrow -2 < x < 2 \Rightarrow D_p = (-2, 2)$ ۲ ✓

الف) $\begin{cases} x-2 > 0 \Rightarrow x > 2 \\ x-4 > 0 \Rightarrow x > 4 \Rightarrow DA = (4, \infty) - \{4\} \end{cases}$ ب) $\begin{cases} x-2 \neq 1 \Rightarrow x \neq 3 \\ x^2-1 > 0 \Rightarrow x^2 > 1 \Rightarrow x > 1 \vee x < -1 \\ x+2 > 0 \Rightarrow x > -2 \\ x+2 \neq 1 \Rightarrow x \neq -3 \end{cases} \Rightarrow DA = (-\infty, -1) \cup (1, \infty) - \{-2\}$	9
الف) $\begin{cases} \frac{x^2-5x+4}{x-2} > 0 \Rightarrow \frac{(x-1)(x-4)}{x-2} > 0 \Rightarrow x > 4 \\ x-2 \neq 0 \Rightarrow x \neq 2 \end{cases} \Rightarrow DA = (4, \infty) - \{2\}$ ب) $\begin{cases} \frac{x+2}{x-2} > 0 \Rightarrow \frac{-2}{x-2} > 0 \Rightarrow x < 2 \\ x \neq 2 \\ x+2 > 0 \Rightarrow x > -2 \\ x+2 \neq 1 \Rightarrow x \neq -3 \end{cases} \Rightarrow DA = (-2, 2) \cup (2, \infty) - \{-3\}$	9
الف) $\begin{cases} x-2 > 0 \Rightarrow x > 2 \\ x - \log_2(x-2) \geq 0 \Rightarrow x \geq \log_2(x-2) \Rightarrow x-2 \leq 1 \Rightarrow x \leq 3 \end{cases} \Rightarrow DA = (2, 3]$ ب) $\begin{cases} x \log_2 x - 1 > 0 \Rightarrow \log_2 x > \frac{1}{x} \Rightarrow x > \sqrt{2} \\ x > 0 \end{cases} \Rightarrow DA = (\sqrt{2}, \infty)$	1
الف) $\varepsilon^x + 1 \neq 0 \Rightarrow \varepsilon^x \neq -1 \Rightarrow DA = \mathbb{R}$ ب) $\varepsilon^x - 1 \neq 0 \Rightarrow \varepsilon^x \neq 1 \Rightarrow \varepsilon^x \neq \varepsilon^0 \Rightarrow x \neq 0 \Rightarrow DA = \mathbb{R} - \{0\}$ ج) $\varepsilon^{x-2} \neq 0 \Rightarrow \varepsilon^x \neq 4 \Rightarrow x \neq 1 \Rightarrow x \neq \frac{1}{4} \Rightarrow DA = \mathbb{R} - \{\frac{1}{4}\}$ د) $\varepsilon^x - 2 \neq 0 \Rightarrow \varepsilon^x \neq 2 \Rightarrow x \neq \log_2 2 \Rightarrow DA = \mathbb{R} - \{1\}$	9
الف) $\varepsilon^{2k+1} \in W \Rightarrow x \in \frac{W-1}{\varepsilon} \Rightarrow DA = \{x \mid x = \frac{k-1}{\varepsilon}, k \in W\}$ ب) $\frac{\varepsilon^x - 2}{\varepsilon^x - 1} \in W \Rightarrow x \in -\frac{-\delta W + 2}{\varepsilon W - 1} \Rightarrow DA = \{x \mid x = \frac{\delta k + 2}{\varepsilon k - 1}, k \in W\}$	1