

الف) $y = \sqrt{2 \sin x - 1} \geq 0$ $\sin x \geq \frac{1}{2}$ $D_f = \left\{ x \mid x = \frac{\pi}{6} + 2k\pi, \frac{5\pi}{6} + 2k\pi \right\}$	ب) $y = \sqrt{\cos x - 1} \geq 0$ $\cos x \geq 1$ $D_f = \{2k\pi\}$	٤
الف) $\cos y = x - 3$ $-1 \leq x - 3 \leq 1$ $2 \leq x \leq 4$ $-4 \leq x \leq -2 \quad D_f = [-4, -2] \cup [2, 4]$	ب) $\arcsin(x^2 + 3x + 1)$ $x^2 + 3x + 1 \geq -1 \quad x^2 + 3x + 1 \leq 1$ $\frac{-3 \pm \sqrt{9 - 4}}{2} = \frac{-3 \pm \sqrt{5}}{2}$ $(x+1)(x+2) \geq 0$ $x^2 + 3x + 1 \leq 1 \quad x^2 + 3x \leq 0 \quad x(x+3) \leq 0$ $D_f = \left[\frac{-3-\sqrt{5}}{2}, -2 \right] \cup \left[2, \frac{-3+\sqrt{5}}{2} \right]$	٧
الف) $y = \sqrt{2 - \log_3(x-2)}$ $x-2 > 0 \quad x > 2$ $2 - \log_3(x-2) \geq 0$ $\log_3(x-2) \leq 2 \quad x-2 \leq 3^2 \quad x \leq 11$ $D_f = (2, 11]$	ب) $y = \log(x^2 - x)$ $x^2 - x > 0$ $x(x-1) > 0$ $\frac{-1 \pm 1}{2} = 0, 1$ $D_f = (-1, 0) \cup (1, +\infty)$	٨
الف) $y = \frac{3}{e^x + 1} \neq 0$ $e^x \neq -1$ $D_f = \mathbb{R}$	ب) $y = \frac{3}{e^x - 1} \neq 0$ $e^x \neq 1 \quad x \neq 0$ $D_f = \mathbb{R} - \{0\}$	٩
ج) $y = \frac{3}{e^x - 2} \neq 0$ $e^x \neq 2$ $x \neq \log_2 2$ $D_f = \mathbb{R} - \{\log_2 2\}$	د) $y = \frac{3}{e^x - 3} \neq 0$ $e^x \neq 3$ $x \neq \log_2 3$ $D_f = \mathbb{R} - \{\log_2 3\}$	
الف) $y = (e^x + 1)!$ $e^x + 1 \in \mathbb{W}$ $x \in \mathbb{W} - 1$ $D_f = \left\{ x \mid x = \frac{k-1}{e}, k \in \mathbb{W} \right\}$	ب) $y = \left(\frac{3x-2}{2x-5} \right)! \in \mathbb{W}$ $\frac{3x-2}{2x-5} \in \mathbb{W}$ $3x-2 \in 2x-5 \cdot \mathbb{W}$ $x(3-2\mathbb{W}) \in 2-5\mathbb{W}$ $x \in \frac{2-5\mathbb{W}}{3-2\mathbb{W}}$	

