

الف) ① $2-x \geq 0$ $x \leq 2$ $D_f^{①②} = [-1.5, 2]$ ② $4 - \sqrt{2-x} \geq 0$ $\sqrt{2-x} \leq 4 \Rightarrow 2-x \leq 16 \Rightarrow x \geq -14$	ب) ① $x - \sqrt{x-2} \geq 0$ $\sqrt{x-2} \leq x-2 \Rightarrow x-2 \leq 9$ $\Rightarrow x \leq 11$ $D_f^{1②} = [2, 11]$ ② $x(x-2) \geq 0 \Rightarrow x \geq 2$	۱
الف) $4 - 2x^2 \geq 0$ $4 \geq 2x^2 \Rightarrow 2 \geq x^2 \Rightarrow x \leq \sqrt{2}$ $D_f = (-\infty, \sqrt{2}]$	ب) $3 x - 9 \geq 0$ $3 x \geq 9$ $x \geq 3$ $\Rightarrow \begin{cases} x \geq 3 \\ x \leq -3 \end{cases}$ $D_f = (-\infty, -3] \cup [3, +\infty)$	۲
الف) $x - 2 = 0$ $x = 2 \Rightarrow x = \pm 2$ $D_f = \mathbb{R} - \{\pm 2\}$	ب) $x \geq 0$ $\sqrt{x} - 2 = 0$ $\sqrt{x} = 2$ $x = 4$ $D_f = [0, +\infty) - \{4\}$	۳
الف) $2 = x \geq 0$ $x \leq 2$ $-2 \leq x \leq 2$ $D_f = [-2, 2]$	ب) $4 - x^2 \geq 0$ $x^2 \leq 4$ $x \leq 2$ $x - 1 = 0$ $x = 1 \Rightarrow x = \pm 1$ $D_f = (-\infty, 2] - \{\pm 1\}$	۴
الف) $x + x \geq 0$ $D_f = \mathbb{R}$	ب) $x x > 0$ $D_f = (0, +\infty)$	۵

ا) $r - [x] \geq 0$ $[x] \leq r$ $x < r$ $D_f = (-\infty, r)$	ب) $r - [x] > 0$ $[x] < r$ $x < r$ $D_f = (-\infty, r)$	٦
ا) $x[x] = 0$ $\Rightarrow x = 0$ $D_f = \mathbb{R} - \{0\}$	ب) $-x[x] > 0$ $+ \frac{0}{0}$ $D_f = \{ \}$	٧
ا) $[x - \frac{1}{r}] + [x + \frac{1}{r}] \geq 0$ $[x + \frac{1}{r} - 1] + [x + \frac{1}{r}] \geq 0$ $[x + \frac{1}{r}] - 1 + [x + \frac{1}{r}] \geq 0$ $2[x + \frac{1}{r}] \geq 1 \Rightarrow [x + \frac{1}{r}] \geq \frac{1}{2} \Rightarrow x + \frac{1}{r} \geq \frac{1}{2} \Rightarrow x \geq \frac{1}{2} - \frac{1}{r}$ $D_f = [\frac{1}{2} - \frac{1}{r}, +\infty)$	ب) $[x - \frac{1}{r}] + [x + \frac{1}{r}] \geq 0$ $[x - \frac{1}{r}] + [x - (x - \frac{1}{r})] \geq 0$ $\Rightarrow x - \frac{1}{r} \in \mathbb{Z}$ $\Rightarrow D_f = \{x \mid x = K + \frac{1}{r}, K \in \mathbb{Z}\}$	٨
ا) $r \sin^2 x - 1 = 0$ $r \sin^2 x = 1$ $\sin^2 x = \frac{1}{r}$ $\Rightarrow \sin x = \pm \frac{\sqrt{r}}{r}$ $\Rightarrow \sin x = \pm \frac{\sqrt{r}}{r} \Rightarrow x: \frac{\pi}{2}, \frac{3\pi}{2}, \pi, 0, \dots$	ب) $\frac{\sin x}{\cos x} + 1 = 0 \Rightarrow \frac{\sin x}{\cos x} = -1$ $\sin x = -\cos x$ $x: \frac{3\pi}{4}, \frac{5\pi}{4}$ $D_f = \{K\pi - \frac{\pi}{4}\}$	٩
ا) $r \sin x \geq 1$ $\sin x \geq \frac{1}{r} \Rightarrow D_f = [\frac{\pi}{6}, \frac{5\pi}{6}]$	ب) $1 - r \cos x \geq 0$ $r \cos x \leq 1$ $\cos x \leq \frac{1}{r}$ $-1 \leq \cos x \leq 1$ $D_f = \mathbb{R}$	١٠