

$$\hookrightarrow D_f = [-1f, r]$$

$$\hookrightarrow D_f = [r, 11]$$

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$$\hookrightarrow [0, +\infty) - \{9\}$$

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① ✓

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

Ⓟ ✓

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

الف) $y = \frac{1}{x[x]}$
 $x[x] \neq 0 \leadsto D_f = \mathbb{R} - \{0\}$
 $\begin{matrix} x > 0 \checkmark \\ x < 0 \checkmark \\ x = 0 \times \text{ممنوع} \end{matrix}$

$\mathbb{R} - [0, 1)$

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ب) $y = \frac{1}{\sqrt{-x[x]}}$
 $-x[x] > 0 \Rightarrow D_f = \emptyset$
 $\begin{matrix} x < 0 \times \\ x = 0 \times \\ x > 0 \times \end{matrix}$

★ $-x[x]$ مختلف العلامات حسب قيم x و $[x]$
 و آخر x ممنوع $x=0$

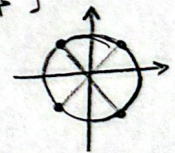
الف) $y = \sqrt{[x-\frac{1}{p}] + [x+\frac{p}{p}]} \leadsto [x-\frac{1}{p}] + [x+\frac{p}{p}] \geq 0 \leadsto [x-\frac{1}{p}+1] + [x+\frac{p}{p}] \geq 1 \leadsto$
 $\leadsto 2[x+\frac{p}{p}] \geq 1 \leadsto [x+\frac{p}{p}] \geq \frac{1}{2} \Rightarrow [x+\frac{p}{p}] \geq 1 \rightarrow x \geq \frac{1}{p}, D_f = [\frac{1}{p}, +\infty)$

Ⓟ ✓

ب) $y = \sqrt{[x-\frac{1}{p}] + [-x+\frac{1}{p}]} \leadsto [x-\frac{1}{p}] + [-x+\frac{1}{p}] \geq 0 \leadsto [a] + [-a] \geq 0$
 $\begin{matrix} a \in \mathbb{Z} \Rightarrow 0 \\ \forall a \notin \mathbb{Z} = x \neq 1 \end{matrix}$
 $\leadsto x - \frac{1}{p} \in \mathbb{Z} \leadsto x \in \mathbb{Z} + \frac{1}{p} \Rightarrow D_f = \{x \mid x = k + \frac{1}{p}, k \in \mathbb{Z}\}$

الف) $y = \frac{1}{\sqrt{\sin^2 x - 1}} \leadsto \sqrt{\sin^2 x - 1} \neq 0 \leadsto \sin^2 x \neq 1 \Rightarrow \sin x \neq \pm \frac{\sqrt{2}}{2} \Rightarrow D_f = \mathbb{R} - \{ \frac{k\pi}{2} + \frac{\pi}{4} \}$

$D_f = \mathbb{R} - \{k\pi \pm \frac{\pi}{4}\}$



Ⓟ ✓

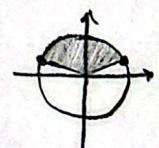
ب) $y = \frac{\cot x + 1}{\tan x + 1} \leadsto \sin x, \cos x \neq 0, \tan x \neq -1 \Rightarrow D_f = \mathbb{R} - \{ \frac{k\pi}{2}, k\pi - \frac{\pi}{4} \}$

$D_f = \mathbb{R} - \{k\pi, k\pi + \frac{\pi}{2}, k\pi - \frac{\pi}{4}\}$



الف) $y = \sqrt{\sin x - 1} \leadsto \sin x - 1 \geq 0 \leadsto \sin x \geq 1 \Rightarrow D_f = [2k\pi + \frac{\pi}{2}, 2k\pi + \frac{5\pi}{2}]$

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ب) $y = \sqrt{1 - 2\cos x} \leadsto 1 - 2\cos x \geq 0 \leadsto \cos x \leq \frac{1}{2} \Rightarrow D_f = [2k\pi + \frac{2\pi}{3}, 2k\pi + \frac{4\pi}{3}]$

