

الف) $y = \sqrt{4-x-n}$

① $4-x-n \geq 0 \Rightarrow n \leq 4-x$

② $4-x-n \geq 0 \Rightarrow 4 \geq \sqrt{4-x} \xrightarrow{\text{مربع}} 4-x \leq 16 \Rightarrow n \geq -14$

$\Rightarrow D_f = [-14, 4]$

ب) $y = \sqrt{3-\sqrt{n-2}}$

① $n-2 \geq 0 \Rightarrow n \geq 2$

② $3-\sqrt{n-2} \geq 0 \Rightarrow 3 \geq \sqrt{n-2} \Rightarrow n-2 \leq 9 \Rightarrow n \leq 11$

$\Rightarrow D_f = [2, 11]$

الف) $y = \sqrt{4-2n^2}$

$4-2n^2 \geq 0 \Rightarrow 2n^2 \leq 4 \Rightarrow n^2 \leq 2 \Rightarrow -\sqrt{2} \leq n \leq \sqrt{2}$

$D_f = [-\sqrt{2}, \sqrt{2}]$

ب) $y = \sqrt{3|n|-9}$

$3|n|-9 \geq 0 \Rightarrow 3|n| \geq 9 \Rightarrow |n| \geq 3$

$D_f = [3, +\infty) \cup (-\infty, -3]$

الف) $y = \sqrt[3]{\frac{|n|+1}{|n|-3}}$

$|n|-3 \neq 0 \Rightarrow |n| \neq 3 \Rightarrow n \neq \pm 3$

$D_f = \mathbb{R} - \{\pm 3\}$

ب) $y = \sqrt[3]{\frac{\sqrt{n}+1}{\sqrt{n}-3}}$

$\sqrt{n}-3 \neq 0 \Rightarrow \sqrt{n} \neq 3 \Rightarrow n \neq 9$

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

الف) $y = \frac{\sqrt{3-|n|}}{|n|+2}$

$3-|n| \geq 0 \Rightarrow |n| \leq 3 \Rightarrow -3 \leq n \leq 3$

$D_f = [-3, 3]$

ب) $y = \frac{\sqrt{4-n^2}}{|n|-1}$

$4-n^2 \geq 0 \Rightarrow n^2 \leq 4 \Rightarrow -2 \leq n \leq 2$

$|n|-1 \neq 0 \Rightarrow |n| \neq 1 \Rightarrow n \neq \pm 1$

$D_f = [-2, 2] - \{\pm 1\}$

الف) $y = \frac{n+1}{\sqrt{n+|n|}}$

$n+|n| \geq 0$

$\begin{cases} n > 0 \rightarrow 2n > 0 \rightarrow n > 0 \\ n = 0 \rightarrow 0 \rightarrow \text{ممنوع} \\ n < 0 \rightarrow n - n = 0 \rightarrow \text{ممنوع} \end{cases} \Rightarrow D_f = (0, +\infty)$

ب) $y = \frac{1}{\sqrt{n|n|}}$

$n|n| > 0$

$\begin{cases} n > 0 \rightarrow n^2 > 0 \rightarrow n > 0 \\ n = 0 \rightarrow 0 \rightarrow \text{ممنوع} \\ n < 0 \rightarrow -n^2 < 0 \rightarrow \text{ممنوع} \end{cases} \Rightarrow D_f = (0, +\infty)$

(الف) $y = \sqrt{r - [n]}$ $r - [n] > 0 \Rightarrow [n] < r \Rightarrow D_f = (-\infty, r)$

(ب) $y = \frac{1}{\sqrt{r - [n]}}$ $r - [n] > 0 \Rightarrow [n] < r \Rightarrow D_f = (-\infty, r)$

(الف) $y = \frac{1}{n[n]}$ $n[n] \neq 0 \Rightarrow n \in [0, 1) \Rightarrow D_f = \mathbb{R} - [0, 1)$

(ب) $y = \frac{1}{\sqrt{-n[n]}}$ $-n[n] > 0 \Rightarrow n[n] < 0$
 $n \times [n] \rightarrow 0 \text{ لـ } + \text{ و } - \text{ مضافا} \rightarrow \text{ممنوع} \rightarrow D_f \rightarrow \emptyset$

(الف) $y = \sqrt{[n - \frac{1}{2}] + [n + \frac{1}{2}]} \rightarrow [n - \frac{1}{2}] + [n + \frac{1}{2}] > 0 \xrightarrow{+1} r[n + \frac{1}{2}] > 1$
 $[n + \frac{1}{2}] \geq \frac{1}{r} \Rightarrow n + \frac{1}{2} \geq \frac{1}{r} \Rightarrow n \geq \frac{1}{r} - \frac{1}{2} \Rightarrow D_f = [\frac{1}{r} - \frac{1}{2}, +\infty)$

(ب) $y = \sqrt{[n - \frac{1}{2}] + [-n + \frac{1}{2}]}$ $[n] + [-n] \rightarrow 0$
 $n - \frac{1}{2} \in \mathbb{Z} \Rightarrow n \in \mathbb{Z} + \frac{1}{2} \Rightarrow D_f = \{x | x = k + \frac{1}{2}, k \in \mathbb{Z}\}$

(الف) $y = \frac{1}{r \sin^2 x - 1}$ $r \sin^2 x - 1 \neq 0 \Rightarrow \sin^2 x \neq \frac{1}{r} \Rightarrow \sin x \neq \pm \frac{1}{\sqrt{r}}$

$x \neq \frac{\pi}{2}, \frac{3\pi}{2}, \frac{5\pi}{2}, \frac{7\pi}{2}, \dots \Rightarrow D_f = \{k\pi + \frac{\pi}{2}, k\pi - \frac{\pi}{2}\} = \{k\pi + \frac{\pi}{2}\}$

$D_f = \mathbb{R} - \{k\pi, k\pi + \frac{\pi}{2}, k\pi + \frac{3\pi}{2}\}$

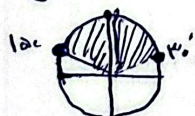
(ب) ① $\sin x \neq 0 \rightarrow x \neq 0, \pi, 2\pi, \dots$

② $\cos x \neq 0 \rightarrow x \neq \frac{\pi}{2}, \frac{3\pi}{2}, \dots$

③ $\tan x \neq 0 \rightarrow \tan x \neq -1 \rightarrow x \neq \frac{3\pi}{4}, \frac{7\pi}{4}, \dots$

$y = \frac{\cos x + 1}{\tan x + 1} = \frac{\frac{\cos x}{\sin x} + 1}{\frac{\sin x}{\cos x} + 1}$

(الف) $y = \sqrt{r \sin x - 1}$ $r \sin x - 1 > 0 \Rightarrow \sin x \geq \frac{1}{r}$



$D_f = [r\pi + \frac{\pi}{4}, r\pi + \frac{3\pi}{4}]$

(ب) $y = \sqrt{1 - r \cos x}$ $1 - r \cos x > 0 \Rightarrow r \cos x \leq 1$

$\cos x \leq \frac{1}{r}$

$D_f = [k\pi + \frac{\pi}{r}, k\pi + \frac{2\pi}{r}]$

