

الف) $4 - \sqrt{2-n} \geq 0 \Rightarrow 4 \geq \sqrt{2-n} \Rightarrow 16 \geq 2-n$
 $\Rightarrow 16 \geq -n \Rightarrow -16 \leq n$ (I), $2-n \geq 0 \Rightarrow 2 \geq n$ (II)
 $\Rightarrow P_f = [-16, 2]$

ب) $3 - \sqrt{n-2} \geq 0 \Rightarrow 3 \geq \sqrt{n-2} \Rightarrow 9 \geq n-2 \Rightarrow 11 \geq n$ (I)
 $n-2 \geq 0 \Rightarrow n \geq 2$ (II)
 $\Rightarrow P_f = [2, 11]$

الف) $4 - 2n^2 \geq 0 \Rightarrow 4 \geq 2n^2 \Rightarrow 2 \geq n^2 \Rightarrow \sqrt{2} \geq n$
 $\Rightarrow P_f = (-\infty, \sqrt{2}]$

ب) $3|n| - 9 \geq 0 \Rightarrow 3|n| \geq 9 \Rightarrow |n| \geq 3$
 $\Rightarrow P_f = \mathbb{R} - (-3, 3)$

الف) $|n| - 3 \neq 0 \Rightarrow |n| \neq 3 \Rightarrow P_f = \mathbb{R} - \{-3, 3\}$

ب) $\sqrt{n} - 3 \neq 0 \Rightarrow \sqrt{n} \neq 3 \Rightarrow n \neq 9$ (I)
 $n \geq 0 \Rightarrow P_f = [0, +\infty) - \{9\}$

الف) $3 - |n| \geq 0 \Rightarrow 3 \geq |n|$ (I), $|n| + 2 \neq 0$
 $\Rightarrow |n| \neq -2$ (II) $\Rightarrow P_f = [-3, 3]$

ب) $4 - n^2 \geq 0 \Rightarrow 4 \geq n^2 \Rightarrow 2 \geq n$ (I), $|n| - 1 \neq 0$
 $|n| \neq 1 \Rightarrow P_f = (-\infty, 2] - \{-1, 1\}$

الف) $n + |n| \geq 0 \Rightarrow n \geq -|n| \Rightarrow P_f = (0, +\infty)$

ب) $n|n| \geq 0 \Rightarrow P_f = (0, +\infty)$

الف) $2 - [n] \geq 0 \Rightarrow 2 \geq [n] \Rightarrow D_f = (-\infty, 2)$

ب) $2 - [n] > 0 \Rightarrow 2 > [n] \Rightarrow D_f = (-\infty, 2)$

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

ب) $-n[n] \geq 0 \Rightarrow D_f = \emptyset$

الف) $[n - \frac{1}{\sqrt{r}}] + [n + \frac{1}{\sqrt{r}}] \geq 0 \Rightarrow [n - \frac{1}{\sqrt{r}}] \geq -[n + \frac{1}{\sqrt{r}}]$
 $\Rightarrow D_f = [\frac{1}{\sqrt{r}}, +\infty)$

ب) $D_f = \{n + \frac{1}{\sqrt{r}} \mid n \in \mathbb{Z}\}$

الف) $r \sin^r n - 1 \neq 0 \Rightarrow r \sin^r n \neq 1 \Rightarrow \sin^r n = \frac{1}{r}$

$\Rightarrow \sin n = \pm \frac{1}{\sqrt[r]{r}} = \pm \frac{\sqrt[r]{r}}{r} \Rightarrow D_f = \mathbb{R} - \{n \mid n \in \mathbb{R},$

$\sin n = \pm \frac{\sqrt[r]{r}}{r}\}$ ب) $\cos \neq \text{undef}, \tan \neq \text{undef}$

$\tan(n) \neq -1 \Rightarrow D_f = \mathbb{R} - \left\{ \frac{k\pi}{r}, \frac{k\pi}{r} + \frac{\pi}{r}, \frac{k\pi}{r} - \frac{\pi}{r} \right\}$

الف) $r \sin n - 1 \geq 0 \Rightarrow r \sin n \geq 1 \Rightarrow \sin n \geq \frac{1}{r}$

$\Rightarrow D_f = \left[\frac{k\pi}{r} + \frac{\pi}{9}, \frac{k\pi}{r} + \frac{2\pi}{9} \right]$

ب) $1 - r \cos n \geq 0 \Rightarrow 1 \geq r \cos n \Rightarrow \frac{1}{r} \geq \cos n$

$\Rightarrow D_f = \left[\frac{k\pi}{r} - \frac{\pi}{\sqrt{r}}, \frac{k\pi}{r} + \frac{\pi}{\sqrt{r}} \right]$