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الف) $\frac{n^2 - 4n}{n^2 - n} \geq 0 \rightarrow n(n-4)$

$\begin{cases} n=0 \\ n=4 \end{cases}$

$n^2 - n \neq 0$

$n(n-1) \neq 0$

$\begin{cases} n=0 \\ n=\pm 1 \end{cases}$

$\frac{-1}{-1} + \frac{1}{1} + \frac{4}{4} + \frac{-1}{-1} +$

$(-1, 0) \cup (0, 1) \cup (4, +\infty)$

ب) $\frac{n^2 - n^2}{n^2 - n} \geq 0 \rightarrow n^2(n^2 - 1)$

$\begin{cases} n=0 \\ n=\pm 1 \end{cases}$

$\frac{-1}{-1} + \frac{1}{1} + \frac{4}{4} + \frac{-1}{-1} +$

$n^2 - n \neq 0$

$\begin{cases} n=\pm 1 \\ n=0 \end{cases}$

$R - \{\pm 1, 0\}$

الف) $n + |m| > 0$

$|m| > 0$

$D_f \rightarrow R^+ \cup (0, +\infty)$

ب) $n|n| > 0$

(R^+)

$D_f = R^+$

$n^2 \rightarrow \checkmark R^+$

$-n^2 \rightarrow R^-$

$0 \rightarrow 0$

الف) $2 - [n] \geq 0$

$[n] \leq 2 \rightarrow n \leq 2$

R^+

$D_f = (-\infty, 2)$

(الف)

ب) $2 - [n] > 0$

$[n] < 2 \rightarrow n < 2$

$(-\infty, 2)$

(ب)

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الف) $[n - \frac{1}{2}] + [n + \frac{1}{2}] \geq 0$

عدد اعشاری از بدلت همیشه بیرون بیاد

$[n] - \frac{1}{2} + [n] + \frac{1}{2} \geq 0$

$2[n] + \frac{1}{2} \geq 0$

$[n] \geq -\frac{1}{4} \rightarrow D_f = [-\frac{1}{4}, +\infty)$ **پایین صفر بیرون**

ب) $[n - \frac{1}{2}] + [-n + \frac{1}{2}] \geq 0$

$[n] - \frac{1}{2} + [-n] + \frac{1}{2} \geq 0$

$[n] \geq -[-n] \rightarrow R - D_f = (-\infty, +\infty)$

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$\sin n - 1 \neq 0$

$\sin n \neq 1$



$R - \{2k\pi + \frac{\pi}{2}\}$

(الف)

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$2\sin^2 - 1 \neq 0$

$\sin^2 \neq \frac{1}{2}$

$\sin \neq \pm \sqrt{\frac{1}{2}}$

$\sin \neq \pm \frac{\sqrt{2}}{2}$

$\frac{\pi}{4} = \frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$

$R - \{2k\pi + \frac{\pi}{4}, 2k\pi + \frac{3\pi}{4}, 2k\pi + \frac{5\pi}{4}, 2k\pi + \frac{7\pi}{4}\}$

$\frac{K\pi}{2} + \frac{\pi}{4}$

$\frac{\pi}{4}, \frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{4}$

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الف) $\cos n \geq 0$ $\cos n \geq 1$ $\sin n \geq \frac{1}{2}$ $\{2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}\}$	ب) $\cos n \geq 0$ $\cos n \geq 1$ $\{2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}\}$ $D_y = \{2k\pi\}$ لستين بيتر 1 في تذايب 	٦
الف) $-1 \leq n - 2 \leq 1$ $2 \leq n \leq 3$ $2 \leq n \leq 3$ $-3 \leq n \leq -2$	ب) $-1 \leq n^2 + 2n + 1 \leq 1$ $n^2 + 2n + 2 \geq 0 \rightarrow (n+1)(n+1)$ $n = -1$ $n = -1$ $(-\infty, -1] \cup [-1, \infty)$ $n^2 + 2n \geq 0$ $n(n+2) \geq 0$ $n = -2$ $n = 0$ $(-\infty, -2] \cup [0, \infty)$	٧
الف) $2 - \log_e(n-2) \geq 0$ $\log_e(n-2) \leq 2$ $n-2 \leq 9$ $n \leq 11$	ب) $n^3 - n > 0$ $n(n^2 - 1) > 0$ $n = \pm 1$ $n = 0$ $(1, \infty) \cup (-1, 0)$	٨
الف) $\varepsilon^n + 1 \neq 0$ $\varepsilon^n \neq -1$ $n \neq 0$ $R = \{0\}$	ب) $\varepsilon^n - 2 \neq 0$ $\varepsilon^n \neq 2$ $n \neq \frac{1}{2}$ $R = \{\frac{1}{2}\}$	٩
الف) $n+1 \in W$ $n \in W-1$ $n \in \frac{W-1}{2}$ $\{n n = \frac{k-1}{2}, k \in W\}$	ب) $\frac{2n-2}{2n-2} \in W \rightarrow 2nW - \Delta W = 2n-2$ $2nW - 2n = -2 + \Delta W$ $n(2W-2) = -2 + \Delta W$ $n = \frac{-2 + \Delta W}{2W-2}$ $\{n n = \frac{-2 + \Delta k}{2k-2}, k \in W\}$	١٠

$$\lfloor x - \frac{1}{r} \rfloor + \lfloor x + \frac{y}{r} \rfloor \geq 0 \rightarrow \lfloor x + \frac{y}{r} - 1 \rfloor + \lfloor x + \frac{y}{r} \rfloor \geq 0$$

$$\forall \lfloor x + \frac{y}{r} \rfloor \geq 1 \rightarrow \lfloor x + \frac{y}{r} \rfloor \geq \frac{1}{r} \rightarrow x + \frac{y}{r} \geq 1 \rightarrow x \geq \frac{1}{r}$$

$$D_y = \left[\frac{1}{r}, +\infty \right)$$

$$\lfloor x - \frac{1}{r} \rfloor + \lfloor -x + \frac{1}{r} \rfloor \geq 0 \rightarrow x - \frac{1}{r} \in \mathbb{Z} \rightarrow x \in \mathbb{Z} + \frac{1}{r}$$

$$D_y = \{x \mid x = k + \frac{1}{r}, k \in \mathbb{Z}\}$$