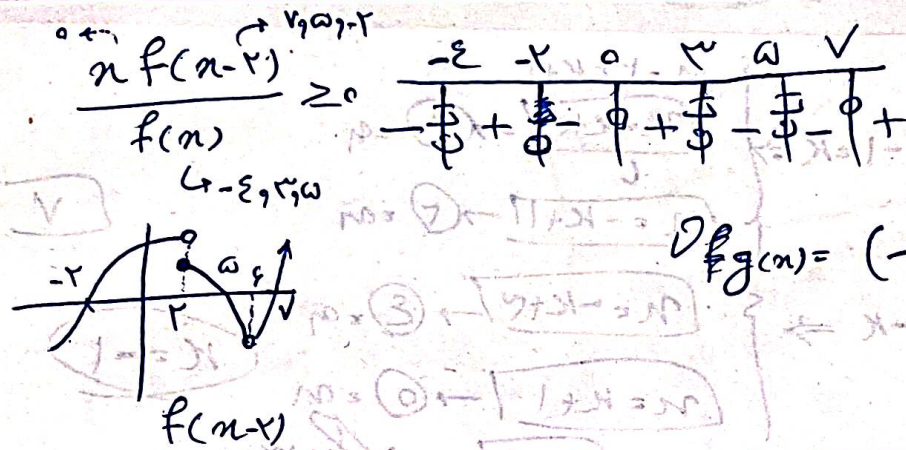


$$n = \begin{cases} 3y-1 & y \geq 0 \\ -y^2 & y > 1 \end{cases} \Rightarrow \begin{cases} \frac{n+1}{3} = y & n \geq -1 \\ \sqrt{-n} = y & n < -1 \end{cases}$$

بدیهه است



$$D_f = (-\infty, 2) \cup (2, +\infty)$$

الف) $f(n) = \frac{2n^2 - 3n + 2}{n(n-2)}$ $\rightarrow 0 < 0$ پس ندارد $D_f = \mathbb{R} - \{0, 2, -2\}$

ب) $\sqrt{f(n)} \rightarrow \frac{2n^2 - 3n + 2}{n(n-2)(n+2)} \geq 0 \Rightarrow \frac{-2}{-} + \frac{0}{+} - \frac{2}{-} + \frac{2}{+} \Rightarrow D_f = (-2, 0) \cup (2, +\infty)$

الف) $n^2 - 2n^2 - 1 \rightarrow n^2 = t \rightarrow t^2 - 2t - 1 = 0 \Rightarrow \begin{cases} t = -2x \\ t = 2\sqrt{x} \end{cases} \Rightarrow n = \pm 2 \Rightarrow D_f = (-2, +\infty) - \{2\}$

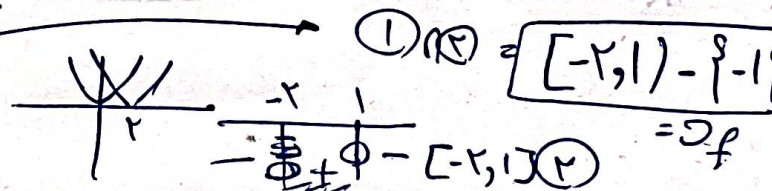
ب) $\sqrt{f(n)} \rightarrow \frac{2n^2 - 3n + 2}{n(n-2)(n+2)} \geq 0 \Rightarrow 2 = [-n] \Rightarrow 2 \leq n < 3 \Rightarrow -3 < n \leq -2 \Rightarrow D_f = \mathbb{R} - (-3, -2)$

الف) $\frac{n(n-1)(n+1)}{\sqrt{|n|+n}} \Rightarrow \begin{cases} n(n-1)(n+1) \geq 0 \Rightarrow \frac{-1}{-} + \frac{0}{+} - \frac{1}{-} + \frac{1}{+} \Rightarrow D_f = [-1, 0] \cup [1, +\infty) \text{ (1)} \\ |n|+n > 0 \Rightarrow n > -|n| \Rightarrow D_f = (0, +\infty) \text{ (2)} \end{cases}$

① ∩ ② $\Rightarrow D_f = [1, +\infty)$ جواب *

ب) $|n| \neq 1 \Rightarrow n \neq \pm 1$ ①

$|n-2| - n^2 \geq 0 \Rightarrow |n-2| \geq n^2$



$$m(m-2)[m-2] \geq 0 \Rightarrow m[m] \geq 0 \quad \checkmark \Rightarrow D_f = \mathbb{R}$$

همواره برقرار است
(نه عدد بدست می آید و هم علامت اند)

$$\Rightarrow |n-1|[n-3] \geq 0 \Rightarrow |n-1|[n-1]-2 \geq 0 \Rightarrow |n-1|[n-1] \geq 2$$

$$\Rightarrow n \geq 3 \Rightarrow [3, +\infty) = D_f$$

$$|n-2|-1 = k \Rightarrow |n-2|-1 = k \Rightarrow \begin{cases} n-2 = k+1 \\ n = k+3 \rightarrow 2 = n \\ n = -k+1 \rightarrow 2 = n \end{cases}$$

$$|n-2|-1 = -k \Rightarrow \begin{cases} n = -k+3 \rightarrow 2 = n \\ n = k+1 \rightarrow 0 = n \end{cases}$$

$$\Rightarrow -k+1 = k+3 \Rightarrow k = -1$$

$$D_f = \mathbb{R} \setminus \{-1, 0, -2, 1\}$$

همه $n \in \mathbb{Z} \Rightarrow n = \mathbb{Z}$

$$n^2 - 11n + 12 = 0 \Rightarrow (n-2)(n-6) = 0 \Rightarrow \begin{cases} n=2 \\ n=6 \end{cases}$$

دو ریشه دارد

$$\log \log \frac{1}{n+1} = \gamma \Rightarrow \begin{cases} n > 0 \\ n > -1 \\ n \neq 0 \\ n \neq 1 \end{cases} \xrightarrow{\wedge} D_f = (0, +\infty) - \{1\}$$

$$-1 \leq \sqrt{n^2-1} \leq 1 \Rightarrow -2 \leq \sqrt{n^2} \leq 2 \Rightarrow n^2 \leq \frac{4}{n^2} \Rightarrow$$

همواره برقرار

$$-\frac{2}{\sqrt{n}} \leq n \leq \frac{2}{\sqrt{n}} \Rightarrow \left[-\frac{2}{\sqrt{n}}, \frac{2}{\sqrt{n}} \right] \Rightarrow D_f = \left[-\frac{2}{\sqrt{n}}, \frac{2}{\sqrt{n}} \right]$$