

$$y = \sqrt{\frac{n^2 - 4n}{n^2 - n}} \quad Z(\frac{n}{n^2 - n}) = \{-1, 0, 1\} \rightarrow n + \{1, 0, 1\} = \{n-1, n, n+1\} \quad D_f = \mathbb{R} - \{-1, 0, 1\} \quad \text{الف}$$

$$y_3 = \sqrt{\frac{n^0 - n^r}{n^r - 1}} \quad \text{مركزية} = \{-1, 0, 1\} \Rightarrow n = \{1, 0, 0, -1\} \Rightarrow \text{مركزية} = \{1, 0, 0, -1\} \quad D_f = 1R - \{0, 0, 0, -1\} \quad (ب)$$

$$\textcircled{2} \frac{n^r(n^r - 1)}{n(n^r - 1)}$$

(الف) $D_f = \mathbb{R} - \underbrace{\{-\infty, 0\}}_{(0, +\infty) = \mathbb{R} \setminus \{0\}} \Rightarrow \text{اعداد منتهية} = \{-2, -1, 0\}$: ریشه منجم

(ب) $D_f = IR - [-\infty, 0]$ $\Rightarrow$ (عدد صفت) $n \neq$ (زیراکمال) $\Rightarrow$ $\{0\}$ ریشه مجز $y = \frac{1}{\sqrt{x|x|}}$ - نشود $(-\infty + \infty) = n > 0$

(الف) $\checkmark \Rightarrow$ زیرا r اعداد صحیح $\Rightarrow x \in \mathbb{Z} \Rightarrow$ زیرا r اعداد صحیح $\Rightarrow x \in \mathbb{Z}$

$\theta = \frac{1}{\sqrt{r-[n]}} \quad r_0 = \begin{cases} r_0 & x \in (-\sqrt{r}, \sqrt{r}) \\ -\sqrt{r} & x \in (\sqrt{r}, +\infty) \\ \sqrt{r} & x \in (-\infty, -\sqrt{r}) \end{cases}$

$$y = \sqrt{\left[n - \frac{1}{2}\right] + \left[n + \frac{1}{2}\right]} \Rightarrow D_f = \mathbb{R} - (-\infty, \frac{1}{4})$$
 (الف)

اعداد $\frac{1}{2}$ و $\frac{1}{4}$ همیشه
 ممکن و حتی -1 هم ممکن

$$D_f = \left[\frac{1}{4} + \infty\right)$$
 ! اینم هست

(ب)

$$y = \sqrt{\left[n - \frac{1}{2}\right] + \left[\frac{1}{2} - n\right]} \Rightarrow D_f = \left\{\frac{1}{4} + n | n \in \mathbb{Z}\right\}$$
 این عبارت همیشه
 این عبارت است
 این ۲ عبارت نیز تکرار می‌شوند

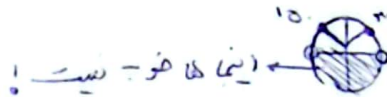
! چون این ۲ عبارت $\frac{1}{4}$ را می‌دهند و عبارت $\frac{1}{4}$ نیز تکرار می‌شود!

$y = \frac{r}{\sin \theta} \Rightarrow \sin \theta = 1 \Rightarrow \theta = \frac{\pi}{2}$

$$j = \frac{r}{rs_H - 1} \Rightarrow rs_H = 1 + r \Rightarrow s_H = \frac{1+r}{r} \Rightarrow s_H = 1 + \frac{1}{r} \Rightarrow \left| \frac{k\pi}{r} + \frac{\pi}{r} \right| \Rightarrow D_f = R - \left\{ \frac{k\pi}{r} + \frac{\pi}{r} \right\}$$

$$y = \sqrt{r \sin \theta - 1} \Rightarrow \theta = \pi \Rightarrow r = 3 \Rightarrow -\sqrt{r} = \{0, 2, 4, 1, 0\} \Rightarrow \left\{ 2k\pi + \frac{\pi}{4}, 2k\pi + \frac{5\pi}{4} \right\} \Rightarrow D_f$$

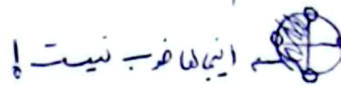
(الف)



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$$\theta = \sqrt{63n - 1} \Rightarrow \theta = \pi \Rightarrow r = \{0, 2, 4, 1, 0\} \Rightarrow -\sqrt{r} = \{1, 0, 9, 0, 2, 7, 0\} \Rightarrow \{2k\pi\} = D_f$$

(ب)



$$\cos y = |x| - 3 \Rightarrow \begin{cases} -1 \leq \cos y \leq 1 \\ -4 \leq x \leq 4 \end{cases} \quad D_f = [-4, -2] \cup [2, 4] \quad \text{(الف)}$$

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$$y = \arcsin(x^2 + 2x + 1) \Rightarrow \begin{cases} -1 \leq x^2 + 2x + 1 \leq 1 \\ -2 \leq x^2 + 2x \leq 0 \Rightarrow -1 \leq x \leq 0 \end{cases} \quad D_f = [-2, -1] \cup [-1, 0] \quad \text{(ب)}$$

$$y = \sqrt{r - \log_r(n-r)} \quad n-r > 0 \Rightarrow n > r \quad \log_r(n-r) \leq r \Rightarrow n-r \leq r^r \Rightarrow n \leq 11 \Rightarrow D_f = (r, 11]$$

(الف)

$$\begin{array}{c} r & 11 \\ - & + & - \\ 0 & & 0 \end{array}$$

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$$y = \log(n^2 - n) \quad \underbrace{n(n^2 - 1)}_{(n+1)(n-1)} > 0 \Rightarrow \begin{array}{c} -1 & 0 & 1 \\ - & + & - \\ 0 & & 0 \end{array} \Rightarrow D_f = (-1, 0) \cup (1, +\infty)$$

(ب)

$$\text{(الف)} \quad \frac{r}{x^m - 1} \Rightarrow x^m = 1 \Rightarrow x^m - 1 = 0 \Rightarrow \log_x^{-1} = n \Rightarrow \frac{1R - \{\log_x^{-1}\}}{\text{قاب قبل نیست}} \quad \log_b^a \left\{ \frac{a}{b}, \frac{a}{b}, \frac{a}{b} \right\} \quad D_f = 1R \setminus \{0\}$$

$$\text{(ب)} \quad \frac{r}{x^m - 1} \Rightarrow x^m = 1 \Rightarrow x^m - 1 = 0 \Rightarrow \log_x^{-1} = n \Rightarrow \frac{1R - \{\log_x^{-1}\}}{\log_b^a \left\{ \frac{a}{b}, \frac{a}{b}, \frac{a}{b} \right\}} \quad D_f = 1R - \{0\} \quad \text{و}$$

$$\text{(ج)} \quad y = \frac{r}{x^m - r} \Rightarrow x^m - r = 0 \Rightarrow x^m = r \Rightarrow \log_x^{-1} = n \Rightarrow \frac{1R - \{\log_x^{-1}\}}{\log_b^a \left\{ \frac{a}{b}, \frac{a}{b}, \frac{a}{b} \right\}} \Rightarrow D_f = 1R - \left\{ \frac{1}{r} \right\} \quad \text{و}$$

$$\text{(د)} \quad y = \frac{r}{x^m - r} \Rightarrow x^m = r \Rightarrow n = \log_x^{-1} \Rightarrow \frac{1R - \{\log_x^{-1}\}}{\log_b^a \left\{ \frac{a}{b}, \frac{a}{b}, \frac{a}{b} \right\}} \Rightarrow D_f = 1R - \{\log_x^{-1}\} \quad \text{و}$$

$$\text{(الف)} \quad y = (n!)! \Rightarrow \{n! \in 1W\} \Rightarrow \{n \in 1W - 1\} \Rightarrow n \in \frac{1W-1}{r} \Rightarrow 1R - \left\{ n! \in \frac{k-1}{r}, k \in 1W \right\} = D_f \quad \text{و}$$

$$\text{(ب)} \quad y = \frac{(n-1)}{r(n-1)} \Rightarrow \frac{n-1}{r(n-1)} \in 1W \Rightarrow n-1 \in r(n-1) - 1W \Rightarrow n-1 \in -1W + r \Rightarrow n(r-1W) \in -1W + r$$

$$\Rightarrow n = \frac{-1W + r}{r - 1W} \Rightarrow 1R - \left\{ n! \in \frac{-1W + r}{r - 1W}, k \in 1W \right\} = D_f \quad \text{و}$$