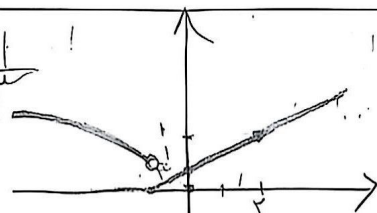
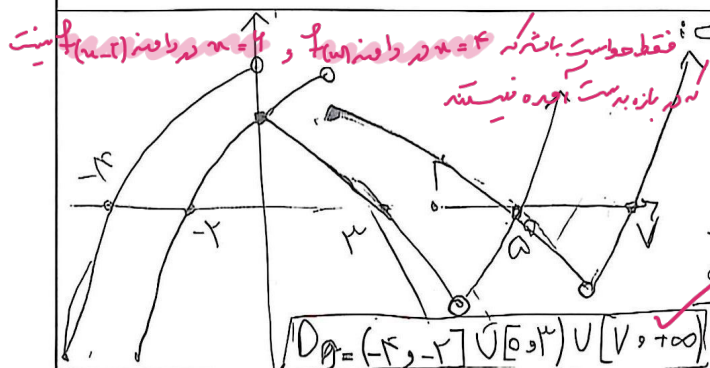


$$y \geq 0 \rightarrow x_2 \leq y - 1 \rightarrow x_2 + 1 \leq y \rightarrow y \geq \frac{1}{\mu} x_2 + \frac{1}{\mu}$$



$$y > 1 \rightarrow x_2 = y^T \rightarrow -x = y^T \rightarrow y = \sqrt{-x}$$

✓ $\frac{1}{2} \log 2$



	1	-1	-1	0	1	1	1	1
x	-	-	-	0	1	1	1	1
$f(x)$	-	0	1	1	1	0	0	1
$f(x-1)$	-	-	0	1	-1	-1	0	0
x	1	0	1	0	0	1	0	1

(الف) $n^2 - 1 \mid n^2 - 1 \Rightarrow n(n^2 - 1) = 0 \Rightarrow \begin{cases} n=0 \\ n^2-1=0 \end{cases} \Rightarrow \{0, \pm 1\} \Rightarrow D_8 \mid P - \{0, \pm 1\} \neq \emptyset$ صحيح

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

$D_{f(x)} \xrightarrow{\text{در } x=0} f(x) > 0 - \frac{x^k \ln x + 1}{x^k - x} \geq 0 \rightarrow$ $\Delta =$ $\begin{pmatrix} 1 \\ 0 \\ 0 \end{pmatrix}$

$- \frac{1}{4} + \frac{1}{4} - \frac{1}{4} + \dots \rightarrow Df_2(-\infty, 0) U (\infty, +\infty)$ ✓

الف) $\frac{n-2}{n^2-2n-1} > 0 \rightarrow n \neq 0$ $\frac{n-2}{n^2-2n-1} > 0$

$D = (2, +\infty) - \{2\}$ ✓

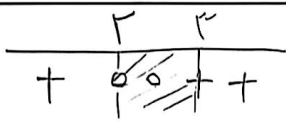
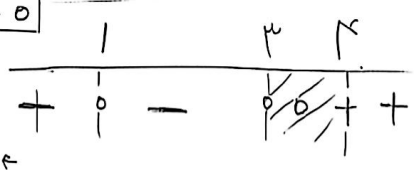
$\frac{-2}{-2} + \frac{2}{2} = 1$

$$\rightarrow) \begin{aligned} & \vec{r} \neq 0 \rightarrow r - r[-\pi] \neq 0 \rightarrow r \neq r[-\pi] \rightarrow [-\pi] \neq \vec{r} \rightarrow \\ & r \neq -\pi \neq r \rightarrow -\pi \neq r \rightarrow 0 = |r - (-\pi, -r)| \end{aligned}$$

$$n(n^2-1) \geq 0 \xrightarrow[n=0]{n=+1} \frac{-}{-} \frac{+}{0} \frac{-}{+} \rightarrow n \in [-1, 0] \cup [1, +\infty) \quad (\text{الف})$$

$$|n| + n > 0 \longrightarrow n > 0 \longrightarrow n \in (0, +\infty)$$

$|x-1| - x^2 > 0 \rightarrow x^2 \leq |x-1| \rightarrow x^2 - |x-1| \leq 0$
 $\mathbb{C} \neq \emptyset \rightarrow |x| \neq 1 \rightarrow x \neq \pm 1$
 $D_f = [-1, 1] - \{-1\}$

الف) $x=2, n=[2, 3] \rightarrow$  $D_f = \mathbb{R} \checkmark$ ب) $x=1, n=[3, 4] \rightarrow$  $D_f = [3, +\infty) \cup \{1\} \checkmark$	۶ ۲
دامنه فقط به دل ریشه های صحیح نیست $k > 0 \rightarrow x-2 - 1 = k \rightarrow x-2 - 1 = k \rightarrow x-2 = k+1$ $x-2 = k+1 \rightarrow x-2 = k+1 \rightarrow x = k+3$ $x-2 = k+1 \rightarrow x-2 = -(k+1) \rightarrow x = 1-k$ $x-2 = 1-k \rightarrow x-2 = 1-k \rightarrow x = 3-k$ $x-2 = 1-k \rightarrow x-2 = -(1-k) \rightarrow x = k+1$ $\{k \neq 0\}$ صغری آفر...	۷ ۲
برای $x=2$ و $x=1$ و $x=3$ دامنه نیستند $x^2 - 9x + 9 = 0 \rightarrow (x-3)^2 = 0 \rightarrow x=3 \checkmark$ یک ریشه	۸ ۲
$\frac{1}{x} > 0 \checkmark$ $x > 0, x \neq 1 \rightarrow \checkmark$ $x+1 > 0, x+1 \neq 1 \rightarrow x \neq 0 \checkmark$ $\log_x \frac{1}{x} > 0 \rightarrow 0 < x < 1$ $\cap \rightarrow 0 < x < 1 \rightarrow D = (0, 1) \checkmark$	۹ ۲
$-5, \sqrt[3]{x^2-1} \leq \sqrt[3]{x^2} \rightarrow \sqrt[3]{x^2} \leq \sqrt[3]{x^2} \rightarrow \sqrt[3]{x^2} \leq \sqrt[3]{x^2} \rightarrow$ $x^2 \leq \frac{x}{x} \rightarrow \frac{-\sqrt{x}}{\sqrt{x}} \leq x \leq \frac{\sqrt{x}}{\sqrt{x}} \checkmark$	۱۰ ۲

$$||x-2|-1| = k \rightarrow \text{۳ ریشه دارد}$$

شکل تابع را با حفظ قاطع مرد هم :

چون ۳ نقطه برخورد دارند پس $k = 1$ بوره!

