

$$\begin{array}{c} r \\ - \quad | \quad + \\ \quad \downarrow \\ \text{تابع خطی} \end{array}$$

$$\int \underbrace{(a-r)x^r + 0x + b}_{a=r \Rightarrow 0} = \int rx + b \quad] f(x=r) \Rightarrow f(x)=0$$

$$\int r + b = 0 \Rightarrow \cancel{r} = -b$$

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$$f(x) = \sqrt{x^r + rx + r - m^r}$$

$$\left. \begin{array}{l} \max_{m=1} \\ \min_{m=-1} \end{array} \right\} 1 - (-1) = 2$$

$$D_f = \{R\} \Rightarrow x^r + rx + r - m^r \geq 0 \Rightarrow \Delta \leq 0$$

$$r - 1 + rm^r \leq 0 \Rightarrow rm^r - r \leq 0 \Rightarrow r(m^r - 1) \leq 0 \Rightarrow r(m+1)(m-1) \leq 0$$

$$\begin{array}{c} -1 \quad 1 \\ + \quad | \quad - \\ \quad 0 \quad 0 \end{array}$$

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$$f(x) = \frac{\sqrt{r-x^r}}{[x] + [-x] + 1}$$

$$[x] - [-x] + 1 \begin{cases} x \in \mathbb{Z} \Rightarrow 1 \\ x \notin \mathbb{Z} \Rightarrow 0 \end{cases} \Rightarrow x \in \mathbb{Z}$$

$$r - x^r \geq 0 \Rightarrow (r-x)(r+x) \geq 0$$

$$\begin{array}{c} -r \quad r \\ - \quad | \quad + \\ \quad 0 \quad 0 \end{array}$$

$$\rightarrow [-r, r]$$

$$\{-r, \cancel{1}, \dots, 1, r\}$$

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$$الف) y = \sqrt{x^r + rx^r} = \sqrt{x^r(x+r)} \Rightarrow x^r(x+r) \geq 0$$

$$\begin{array}{c} -r \quad 0 \\ - \quad | \quad + \\ \quad 0 \quad 0 \end{array}$$

$$D_f = [-r, +\infty)$$

$$ب) y = \sqrt{\frac{(x-1)(x^r-x^r)}{x^r-1}} = \sqrt{\frac{(x-1)(x^r-x^r)}{x^r-1}} \geq 0$$

$$(x-1)(x+1)(x^r)(x-r) \geq 0$$

$$x^r - 1$$

$$\begin{array}{c} -1 \quad 1 \quad r \\ + \quad | \quad - \\ \quad 0 \quad 0 \end{array}$$

برای $x=1$ تعریف نشده است

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$$د) y = \sqrt{|x-2| - r} \Rightarrow |x-2| - r \geq 0$$

$$|x-2| \geq r \Rightarrow x-2 \geq r \Rightarrow x \geq 2+r$$

$$x-2 \leq -r \Rightarrow x \leq -1$$

$$D_f = (-\infty, -1] \cup [2+r, +\infty)$$

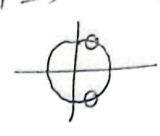
$$ه) y = \sqrt{r - |2-x|} \Rightarrow r - |2-x| \geq 0$$

$$r \geq |2-x| \Rightarrow r \geq 2-x \geq -r$$

$$r \geq -2-x \geq -r \Rightarrow -r \geq x \geq -2-r$$

$$D_f = [-2-r, -r]$$

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الف) $y = \sqrt{1-x x } \Rightarrow 1-x x \geq 0$ $\frac{1}{+ \quad \quad -}$ $D_f = (-\infty, 1]$	ب) $\frac{1}{\sqrt{3- x-5 }-1} \rightarrow y- x-5 > 0$ $2 > x-5 \Rightarrow 2 > x-5 > -2$ $7 > x > 3 \quad D_f = (3, 7)$ صورت سوال را اشتباه نوشتی 1, 2, 5 $\sqrt{3- x-5 }-1$ در $3- x-5$ $\sqrt{3- x-5 }-1 \neq 0$
الف) $y = \frac{\sin^2 x - 1}{\cos x} \rightarrow \cos x \neq 0$  $D_f = \mathbb{R} - \{k\pi + \frac{\pi}{2}\}$	ب) $y = \frac{\cos 2x}{\sqrt{\cos 2x}-1} \rightarrow \sqrt{\cos 2x}-1 \neq 0$ $\cos x \neq \frac{1}{2}$  $D_f = \mathbb{R} - \{2k\pi - \frac{\pi}{3}, 2k\pi + \frac{\pi}{3}\}$
الف) $y = \frac{x+3}{ 2x+1 - x+3 } \Rightarrow 2x+1 - x+3 \neq 0$ $2x+1 \neq x+3$ $4x^2+4x+1 \neq x^2+6x+9$ $3x^2-2x-8 \neq 0$ $3x^2-2x-8 \neq 0 \Rightarrow (x-4)(x+\frac{2}{3}) \neq 0 \Rightarrow x \neq \frac{4}{3}, -\frac{2}{3}$ $D_f = \mathbb{R} - \{\frac{4}{3}, -\frac{2}{3}\}$	ب) $y = \sqrt{ 2x+1 - x+3 } \Rightarrow 2x+1 - x+3 \geq 0$ $2x+1 \geq x+3 \Rightarrow 4x^2+4x+1 \geq x^2+6x+9$ $3x^2-2x-8 \geq 0 \Rightarrow (3x+4)(x-2) \geq 0$ $\frac{-\frac{4}{3}}{+ \quad \quad -} \quad \frac{2}{- \quad \quad +}$ $D_f = (-\infty, -\frac{4}{3}] \cup [2, +\infty)$
$f(x) = \sqrt{\log_{\log_{\frac{1}{5}}(2x-1)}} \Rightarrow \log_{\log_{\frac{1}{5}}(2x-1)} \geq 0$ $\log_{\frac{1}{5}}(2x-1) > 0 \Rightarrow 2x-1 > 1 \Rightarrow x > 1$ $\log_{\log_{\frac{1}{5}}(2x-1)} \geq 0 \Rightarrow \log_{\frac{1}{5}}(2x-1) \leq 1$ وقتی متناهی در حالت مثبت نامعادله معکوس می شود!	$2x-1 > 0 \rightarrow x > \frac{1}{2}$ استخراج $D_f = [1, 3]$ $(2x-1) \leq 5 \Rightarrow x \leq 3$ صورت سوال را اشتباه نوشتی! 1, 2, 5
الف) $y = \log(2\cos x + 1)$ $2\cos x + 1 > 0 \Rightarrow \cos x > -\frac{1}{2}$  $D_f = (2k\pi - \frac{2\pi}{3}, 2k\pi + \frac{2\pi}{3})$	ب) $y = \sqrt{\log \frac{x-1}{x+1}} \rightarrow \frac{x-1}{x+1} > 0$ $\log \frac{x-1}{x+1} \geq 0 \Rightarrow \frac{x-1}{x+1} \geq 1 \Rightarrow \frac{-2}{x+1} \geq 0$ $D_f = (-\infty, -1)$

٣- ب) $\frac{(n^2-1)(n^2-n^2)}{(n^2-1)} \geq 0 \rightarrow \frac{(n-1)(n+1)(n^2)(n-1)}{(n-1)(n^2+n+1)} \geq 0$
 $\begin{array}{ccccccc} & -1 & * & 0 & * & 1 & 3 \\ + & 0 & - & 0 & - & 0 & + \end{array}$

 $D_f = (-\infty, -1] \cup \{0\} \cup [3, +\infty)$
 $\Delta < 0$

٤- ب) $3 - |n-5| \geq 0 \rightarrow |n-5| \leq 3 \rightarrow -3 \leq n-5 \leq 3 \rightarrow 2 \leq n \leq 8$
 $\sqrt{3 - |n-5|} - 1 \neq 0 \rightarrow \sqrt{3 - |n-5|} \neq 1 \rightarrow 3 - |n-5| \neq 2 \rightarrow |n-5| \neq 2 \rightarrow n \neq 3, 7$
 $D_f = [2, 8] - \{3, 7\} = [2, 3) \cup (3, 7) \cup (7, 8]$

٩) $\log_{1/5} \log_a^{n-1} \rightarrow n-1 > 0 \rightarrow n > 1$

$\log_a^{n-1} > 0 \rightarrow n-1 > 0 \rightarrow n-1 > 1 \rightarrow n > 2$

$\log_{1/5} \log_a^{n-1} \geq 0$
 $\xrightarrow[\text{مناسبه هـ را}]{\text{حقیقت عوض منسوب!}}$
 $\log_a^{n-1} \leq (1/5) \rightarrow \log_a^{n-1} \leq 1 \rightarrow n-1 \leq 5 \rightarrow n \leq 6 \rightarrow n \leq 3$
 $\hookrightarrow D_f = (1, 3]$