

$$f(n) = \sqrt{\log_a \log_a^{(r)n-1}}$$

$$r_{n-1} > 0 \quad r_n > 1 \quad n > \frac{1}{r}$$

$$\log_a^{(r_{n-1})} > 0 \quad r_{n-1} > 1 \quad r_n > 2 \quad n > 1$$

$$\log_{\frac{1}{r}} \log_a^{(r_{n-1})} \geq 0 \quad \log_a^{(r_{n-1})} \leq 1 \quad r_{n-1} \leq \infty \quad r_n \leq 4 \quad n \leq 3$$

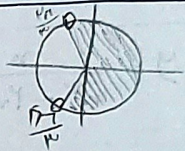
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$$1 < n \leq 3 \quad D_f = (1, 3]$$

الف) $y = \log(r \cos n + 1)$

$$r \cos n + 1 > 0 \quad r \cos n > -1 \quad \cos n > -\frac{1}{r}$$

$$D_f = (r\pi - \frac{\pi}{r}, r\pi + \frac{\pi}{r})$$



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ب) $y = \sqrt{\log \frac{n-1}{n+1}}$

$$\frac{n-1}{n+1} > 0 \quad \frac{-1}{+} \frac{1}{-} \frac{1}{+} \rightarrow n \in (-\infty, -1) \cup (1, +\infty)$$

$$D_f = (-\infty, -1)$$

$$\log \frac{n-1}{n+1} \geq 0 \quad \frac{n-1}{n+1} \geq 1 \quad \frac{n-1-n-1}{n+1} \geq 0 \quad \frac{-2}{n+1} \geq 0 \quad n \in (-\infty, -1)$$

$$f(n) = \sqrt{(a+r)n^r + an + b}$$

$$a+r=0 \quad a=-r$$

$$-r + b \geq 0$$

$$\frac{b}{r} = 3$$

$$b = 9$$

$$b = ?$$

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اختلاف بیشترین و کمترین مقدار m ؟

$$f(n) = \sqrt{n^r + rn + r - m^r}$$

$$\Delta \leq 0 \rightarrow b^2 - 4ac \leq 0$$

$$a > 0 \quad r$$

$$f - f(r - m^r) \leq 0 \quad 1 \leq r - m^r \quad -1 \leq -m^r$$

$$1 \geq m^r$$

$$1 \geq m \geq -1$$

$$1 - (-1) = 2$$

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

$$f - n^r \geq 0 \quad f \geq n^r \rightarrow r \geq m \geq -r$$

$$[n] + [-n] \neq -1 \rightarrow n \in \mathbb{Z}$$

$$D_f = \{-r, -1, 0, 1, r\}$$

$$n \in \mathbb{Z}$$

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تکلیف ۳

فاجله شکرانی

یا زدهم دفعه B

الف) $y = \frac{n+3}{2n^3+3n^2-11n+3}$

$\frac{2n^3+3n^2-11n+3}{2n^3+3n^2-11n+3} \cdot \frac{n-1}{n-1} = \frac{2n^3+3n^2-11n+3}{2n^3+3n^2-11n+3} \cdot \frac{n-1}{n-1} \rightarrow (n+3)(2n-1)$

$\hookrightarrow \frac{n+3}{(n+3)(2n-1)(n-1)} \rightarrow D_f = R - \{-3, \frac{1}{2}, 1\}$

ب) $y = \frac{n+3}{2n^3+9n^2+10n+3}$

$\frac{2n^3+9n^2+10n+3}{2n^3+9n^2+10n+3} \cdot \frac{n+1}{n+1} = \frac{2n^3+9n^2+10n+3}{2n^3+9n^2+10n+3} \cdot \frac{n+1}{n+1} \rightarrow (2n+1)(n+3)$

$\hookrightarrow \frac{n+3}{(n+3)(2n+1)(n+1)} \rightarrow D_f = R - \{-3, -\frac{1}{2}, -1\}$

الف) $y = \frac{n+3}{n^3-2n^2+2n-1}$

$\frac{n^3-2n^2+2n-1}{n^3-2n^2+2n-1} \cdot \frac{n-1}{n-1} = \frac{n^3-2n^2+2n-1}{n^3-2n^2+2n-1} \cdot \frac{n-1}{n-1} \rightarrow$ نمی نارد

$\hookrightarrow \frac{n+3}{(n-1)(n^2-n+1)} \rightarrow D_f = R - \{1\}$

ب) $y = \sqrt{\frac{n+3}{n^3-2n^2+2n-1}}$

$\frac{n+3}{(n-1)(n^2-n+1)} \geq 0$ $\frac{-3}{+} \frac{1}{-}$ $D_f = (-\infty, -3] \cup (1, +\infty)$

$y = \frac{2}{n^2-2|x-1|-2n+2}$

$D_f = R - \{-3, 0, 2, 2\}$

$n \geq 1 \rightarrow \frac{2}{n^2-2n+2-2n+2} = \frac{2}{n^2-4n+4} = \frac{2}{(n-2)^2}$

$D_f = R - \{2, 2\}$

$n < 1 \rightarrow \frac{2}{n^2-2+2n-2n+0} = \frac{2}{n^2-2} = \frac{2}{n(n+2)}$

$D_f = R - \{-3, 0\}$

الف) $y = \frac{n+3}{|2n+1|-|n+3|}$

$|2n+1|-|n+3|=0$

$|2n+1|=|n+3|$

$2n^2+1+2n = n^2+9+6n \rightarrow 3n^2-2n-8=0 \rightarrow (n-2)(\frac{1}{3}n+4)=0$

$D_f = R - \{-\frac{4}{3}, 2\}$

ب) $y = \sqrt{|2n+1|-|n+3|}$

$|2n+1|-|n+3| \geq 0$

$|2n+1| \geq |n+3|$

$2n^2+1+2n \geq n^2+9+6n$

$3n^2-2n-8 \geq 0 \rightarrow (n-2)(\frac{1}{3}n+4) \geq 0$

$D_f = (-\infty, -\frac{4}{3}] \cup [2, +\infty)$

الف) $y = \log_r (1 - \log_{\frac{n}{4}})$

$\log_{\frac{n}{4}} \rightarrow n > 0$

$1 - \log_{\frac{n}{4}} > 0 \rightarrow 1 > \log_{\frac{n}{4}}$

$\frac{n}{4} > n \rightarrow \frac{n}{4} > n > 0$

$D_f = (0, 4)$

ب) $y = \log_r (1 - \log_{\frac{n}{4}})$

$\log_{\frac{n}{4}} \rightarrow n > 0$

$1 - \log_{\frac{n}{4}} > 0 \rightarrow 1 > \log_{\frac{n}{4}}$

$\frac{1}{4} < n$

$D_f = (\frac{1}{4}, +\infty)$