

$$f(u) = \begin{cases} u-1 & u \geq 1 \\ u-1 & u < 1 \end{cases} \rightarrow \text{تغییر است}$$

$$u = t + 1$$

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$$u = t + 1 \rightarrow u = t + 1 \rightarrow u = t + 1 \rightarrow u = t + 1$$

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$$y = \sqrt{f(u) - f(u+1)} \rightarrow \text{تغییر است}$$

$$f(u) - f(u+1) \geq 0 \rightarrow f(u) \geq f(u+1)$$

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$$D \in (-\infty, 1] \checkmark$$

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$$f(u) = (u^2 + u)^2 \rightarrow \text{تغییر است}$$

$$f(u) < f(u^2) \rightarrow f(u) < u^2 \rightarrow$$

$$(u^2 + u)^2 < u^2 \rightarrow u^2 + u < u \rightarrow u^2 < 0 \rightarrow u < 0$$

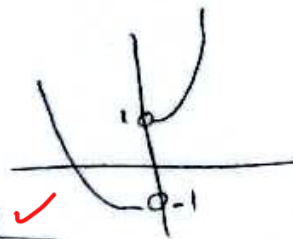
$$u \in (-\infty, 0) \checkmark$$

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$$y = \ln(u - \frac{1}{u}) \rightarrow \begin{cases} u < 0 \rightarrow -u(u - \frac{1}{u}) = -(u^2 + 1) \\ u > 0 \rightarrow +u(u - \frac{1}{u}) = u^2 - 1 \end{cases}$$

$$\text{تغییر است} \checkmark$$

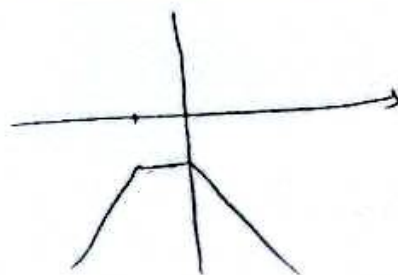


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$$f(u) = \frac{u+1}{|u-1|} \rightarrow \begin{cases} u < -1 & \frac{u+1}{-u+1} \\ -1 < u < 1 & \frac{u+1}{-u-1} \\ u > 1 & \frac{u+1}{u-1} \end{cases}$$

$$u \in (-\infty, 0] \rightarrow \text{max} \checkmark$$



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$$y = \log_{\frac{1}{2}}(u^2 - 2u - 1) \rightarrow \begin{cases} u^2 - 2u - 1 > 0 \\ u^2 - 2u - 1 \leq 0 \end{cases}$$

$$u^2 - 2u - 1 > 0 \rightarrow (-\infty, -2) \cup (4, +\infty)$$

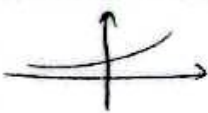
$$u^2 - 2u - 1 \leq 0 \rightarrow (-\infty, 5) \rightarrow u = \frac{-b}{2a} = 1 \rightarrow (-\infty, 1] \checkmark$$

$$u = 1$$

تغییر است! بزرگ!

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$a \rightarrow a > 1 \rightarrow$  $\frac{a^x}{x}$ $a \rightarrow 0 < a < 1 \rightarrow$  $\frac{a^x}{x}$ $a^x - x > 0 \rightarrow a > 1 \rightarrow \frac{a^x}{x} > 1$ $a^x - x < 0 \rightarrow 0 < a < 1 \rightarrow \frac{a^x}{x} < 1$ $a^x - x = 0 \rightarrow a = \pm \sqrt{x}$ چون سوال نلغته تابع غایب!	۱, ۵ ۶
$f(u) = u^m + au^r + bu + c$ $f(u) = (u+m)^n \rightarrow (-m, -1)$ $g(u) = u^r \rightarrow (0, 0)$ $m \leq r$ $n \leq -1$  $f(u) = (u+m)^n - 1 \rightarrow f(u) = (u+m)^n - 1$ $u, m \leq 1$ $n \leq -1$ $(-r, +\infty) \rightarrow k \leq r$	۲ ۷
$f(u) = u + \sqrt{u} - 2$ $f'(u) = 1 + \frac{1}{2\sqrt{u}} = 0 \rightarrow u = \frac{1}{4}$ $f''(u) = -\frac{1}{4u^{3/2}} < 0$ $f(u) \leq f(\sqrt{u}) \rightarrow f(u) \leq \sqrt{u} \rightarrow u\sqrt{u} \leq \sqrt{u} \rightarrow u \leq 1$ $u \geq 1$ $u \leq 1$ $u \geq 0$ $[1, 2] \rightarrow$ عدد ۲	۱, ۲, ۵ ۸
$f(u) = \sqrt[3]{465u-1} - \sqrt[3]{465u+1}$ $f(u) = \frac{1}{t}$ $\min t \rightarrow \sqrt[3]{465u-1} - \sqrt[3]{465u+1}$ $\max t \rightarrow \sqrt[3]{465u-1} + \sqrt[3]{465u+1}$ $\frac{1}{t} = \frac{1}{p} \rightarrow \frac{1}{p} + p = \frac{10}{r}$ $\left[\frac{5}{r}, \frac{10}{r} \right] \rightarrow \frac{b-a}{r} = \left(\frac{5}{r} \right)$	۵ ۹
$f(u) = u - [u] \rightarrow u - [u] \rightarrow Rf = [0, 1)$ $Rf = Dg \rightarrow Dg = [0, 1)$ $g(r) \rightarrow \frac{10}{r}$ $g(r) \rightarrow \frac{10}{r}$ $R_{g \circ f} = \left[-\frac{10}{r}, \frac{10}{r} \right)$ چون راه حل درست نصف عدد رو میدیم	۱ ۱۰