

۱۴۰۴، ۴، ۳۱ ۱۲

تاریخ منتهی

No
Date

الف ۷

$$f(x) \Rightarrow S \left| \frac{x}{a} \right| \frac{1}{r} \Rightarrow g(x) = f\left(x - \frac{1}{r}\right) + \frac{1}{r} = -\frac{1}{r}x^2 + \frac{1}{r}x - \frac{1}{r} - 1$$

$$g(x) = -\frac{1}{r}x^2 + \frac{1}{r}x - \frac{1}{r} = 0 \rightarrow x^2 - x + 1 = 0 \quad \begin{cases} x=1 \\ x=-1 \end{cases} \quad \text{✓}$$

$$f(x) \xrightarrow{u = \frac{x-r}{r}} 1 - r f\left(\frac{x-r}{r} + r\right) \quad \begin{cases} u+1 = x \\ u = x-r \end{cases} \quad \begin{cases} u+1 = x \\ u = x-r \end{cases} \quad \begin{cases} u+1 = x \\ u = x-r \end{cases}$$

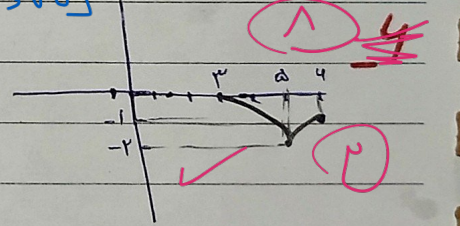
$$y = r - \sqrt{r(x+1)} \rightarrow y = r - \sqrt{r(x+1)} \rightarrow y = \sqrt{r(x+1)} - r$$

$$D_g = [-1, b) \xrightarrow{g(x+1)} D_g = [-r, b) \quad D_f = (a, r] \xrightarrow{f(x-1)} D_f = (a, a]$$

$$f\left(\frac{x}{r} + 1\right) \rightarrow f(x) \rightarrow |rf(x) - r|$$

$$D_{g_r} = \left[-\frac{1}{r}, \frac{r}{r}\right] \quad R_y \rightarrow -1 \leq y \leq r \rightarrow -r \leq ry - r \leq 1 \rightarrow -r \leq |ry - r| \leq 1$$

$$f(x+r) \rightarrow f(x) \rightarrow f(x-1) \rightarrow \begin{matrix} -r & -1 & 1 & r \\ 1 & 1 & 1 & 1 \end{matrix}$$

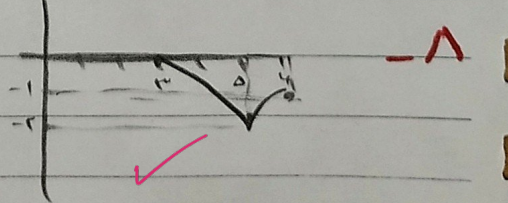


سوال ۴ صفر

$$f(x) = \log_r x \rightarrow \log_r^{x+r} \rightarrow -\log_r^{x+r} \rightarrow r - \log_r^{x+r} \rightarrow r - \log_r^{x+r} = g(x) \quad \text{✓}$$

$$g(-14) = r - \log_r^{14} = -1, \quad g(4r) = r - \log_r^{4r} = -3 \rightarrow -1 - 3 = -4$$

$$f(-x+r) + r \rightarrow f(x) \rightarrow f(x-1) \rightarrow \begin{matrix} -r & -1 & 1 & r \\ 1 & 1 & 1 & 1 \end{matrix}$$



نمودار داده شد!

$$\left| \frac{x-1}{2x-3} \right| < -1-x \rightarrow \text{جواب قد، مطلق (+)} \rightarrow x < -1$$

$$\frac{x-1}{2x-3} < -1-x \rightarrow \frac{2x^2-6}{2x-3} < 0$$

$$\frac{-\sqrt{2} \quad \sqrt{2} \quad \frac{3}{2}}{-1 \quad +1 \quad -1 \quad +}$$

$$x < -1$$

$$x < -\sqrt{2}$$

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$$g(x) = \left| \frac{(x-2)+1}{2(x-2)+1} \right| + 1, \quad g(x) + x < 0 \Rightarrow \left| \frac{x-1}{2x-3} \right| + 1 + x < 0$$

$$\left| \frac{x-1}{2x-3} \right| < -1-x \Rightarrow x < -1$$

$$f(x) = (x-2)^3 + 2\sqrt{x}, \quad g(x) = \sqrt{\frac{f(x)(3-f(x))}{3}} \Rightarrow \begin{cases} f(x) = 0 \rightarrow x = 0 \\ 3 - (x-2)^3 - 2\sqrt{x} = 0 \\ f(x) = 3 \rightarrow x = 3 \end{cases}$$

$$Dg = [0, 3]$$

$$f(u) = k(x-2)^3 + 2\sqrt{x} \xrightarrow{(\cdot)} k \geq \frac{2\sqrt{x}}{x} \cdot \leq f(u) \leq u$$

$$f(u) = 0 \rightarrow u = 0$$

$$f(u) = u \rightarrow u = \frac{1}{2} \rightarrow \cdot \leq u \leq \frac{1}{2} \quad [1, 2]$$