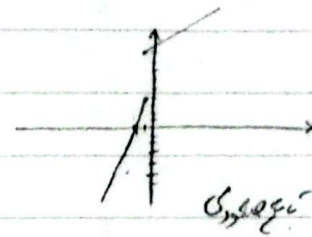


$$f(x+r) = \begin{cases} rx+d & x \geq 1 \\ rx-1 & x < 1 \end{cases} \xrightarrow[-r \text{ add}]{+r \text{ add}} f(x) = \begin{cases} r(x+r)+d & x+r \geq 1 \\ r(x+r)-1 & x+r < 1 \end{cases} \quad (1)$$

$$\sqrt{f(r-x)-f(x+1)} \quad \text{D: } f(r-x) \geq f(x+1)$$

$$5 \quad r-x \leq x+1 \quad x \leq r \quad x \leq 1$$



$$f(x) = (x^r + x)^r \quad \text{Case 1}$$

$$\text{Let } f(x) < f(x^r) \Rightarrow f(x) < x^r \quad (x^r + x)^r < x^r \quad x^r + x < x$$

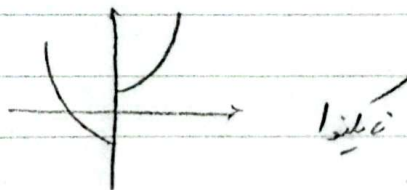
$$f(x^r)$$

$$x^r < 0 \quad x < 0$$

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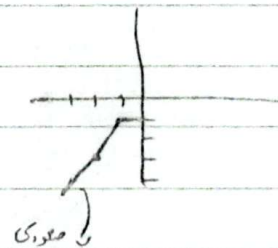
$$y = |x| \left(x^r + \frac{1}{x} \right) \xrightarrow{x > 0} x^r + 1$$

$$\xrightarrow{x < 0} -x^r - 1$$



$$15 \quad \frac{rx+1}{|x|-|x+1|} \Rightarrow \frac{-x-x+1}{-x-x-1} = \frac{-2x+1}{-2x-1}$$

$$\frac{rx+1}{1} = \frac{rx+1}{-2x-1} = -1 \quad \frac{rx+1}{-1} = -rx-1$$



$$20 \quad y = \log \frac{(x^r - rx - 1)}{1} \quad x^r - rx - 1 > 0 \quad \frac{-r}{+1} \quad \frac{f}{-1} \quad +$$

$$x > r : \log \frac{x^r - rx - 1}{1} \rightarrow \text{Case 1 (d)}$$

$$x < -r : x^r - rx - 1 \rightarrow \text{Case 2} \rightarrow \text{Case 3}$$

$$f(x) = (x^r - r)^x \quad \text{Case 1} \quad x^r - r > 1 \quad x^r > r \quad \begin{cases} x > r \\ x < -r \end{cases} \quad (1)$$

$$x^r - r \geq 1 \quad x^r \geq r \quad \begin{cases} x > r \\ x < -r \end{cases} \quad (2)$$

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$$f(x) = x^r + ax^r + bx + c$$

$$a(x+r)^r - 1$$

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$$a \leq 1 \rightarrow (x+r)^r - 1 \leq 0 \quad (x+r)^r \leq 1 \quad x, r \leq 1$$

$$x = -r$$

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$$y = x - x$$

$$(k, a) \rightarrow k = r$$

Subject:

Year: Month: Day: ()

page: ()

$$f(n) \leq f(\sqrt{n}) \quad \text{Since } f(n) \leq \sqrt{n} \quad n + \sqrt{n} - 2 \leq \sqrt{n} \quad (1)$$

$$f(f(n)) \quad n - 2 \leq 0$$

$$b^c: \sqrt{n} \rightarrow n \geq 0 \quad \rightarrow 1, 2 \rightarrow \text{assumed} \quad n \leq 2$$

$$\frac{r\sqrt{4\cos^2 r - 1}}{r} \quad \frac{r\sqrt{1 - 4\cos^2 r}}{r} \quad \cdot \cos^2 r \leq 1 \quad \cdot \sqrt{4\cos^2 r} \leq 2 \quad -1 \leq 4\cos^2 r - 1 \leq 1 \quad (9)$$

$$-1 \leq \frac{r\sqrt{4\cos^2 r - 1}}{r} \leq 1$$

$$\xrightarrow{\text{S380}} A(t) = r^t - r^{-t} \quad t = -1 \rightarrow -\frac{r}{r} \geq \left[-\frac{r}{r}, \frac{1}{r}\right]$$

$$t = 1 \rightarrow \frac{1}{r} \quad b = a + \frac{1}{\epsilon} + \frac{r}{r} = \frac{r+1}{r} \quad 10$$

$$f(n) \leq n - \{n+r\} \rightsquigarrow n - \{n\} + r \rightsquigarrow -r \leq n - \{n\} + r \leq -1 \quad (10)$$

$$\cdot \{n - \{n\}\} < 1$$

$$g(n) = \frac{r^m - r^{-m}}{r} \quad \frac{r^{-r} - r^r}{r} = -\frac{1}{r} \quad 15$$

$$gof = \frac{r^{-1} - r^1}{r} = -\frac{r}{r} = -\frac{r}{r} \quad \left(-\frac{r}{r}, \frac{1}{r}\right)$$

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