

$$f(3-n) \gg f(n+1)$$

$$x = -n+1$$

$$f(3-n) = -3n+1 \gg n$$

$$\begin{array}{c} \frac{0}{\epsilon n + 1} \gg \frac{0}{\epsilon n - 1} \mid \frac{1}{-3n+1} \gg \frac{1}{\epsilon n - 1} \mid \frac{1}{-3n+1} \gg \frac{1}{3n+1} \\ n \leq 1 \quad \frac{1}{3} \gg n \quad n \leq 1 \\ 0 \leq n \leq \frac{1}{3} \quad x \end{array}$$

$$x = n-1$$

$$f(n+1) \quad 3n+2 \quad n \gg 1 \\ \epsilon n - 1 \quad n \leq 1$$

$$(-\infty, \frac{1}{3}]$$

$$f(f(n)) < f(n^3)$$

$$(n^3+n)^3 < n^9 \xrightarrow{\text{bta}} n^3+n < n \quad n^3 < 0$$



$$n < 0$$

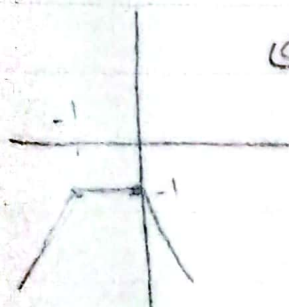
$$n > 0 \quad n(n^3 + \frac{1}{n}) = n^4 + 1$$

$$n < 0 \quad -n(n^3 + \frac{1}{n}) = -n^4 - 1$$



ناتوان

$$\frac{3n+1}{|n|-|n+1|} \times \frac{|n|+|n+1|}{|n|+|n+1|} = \frac{1}{\cancel{3n} - \cancel{3n} - 2n - 1} = -|n| - |n+1|$$

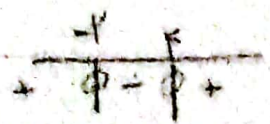


$$f(x) = (-\infty, 0]$$

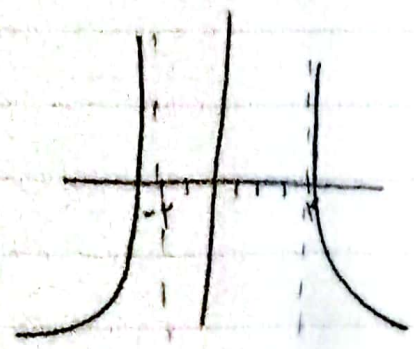
$$0, 0, 0$$

$$a = 0$$

$$u^r - r u - \lambda > 0$$



$$\log \frac{u^r - r u - \lambda}{1/r}$$



$(-\infty, -r)$, در بازه
منفی است

$$a^r - r > 1$$

$$a^r > r$$

$$a > r$$

$$a < -r$$

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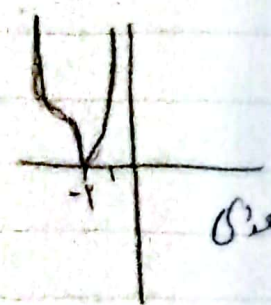
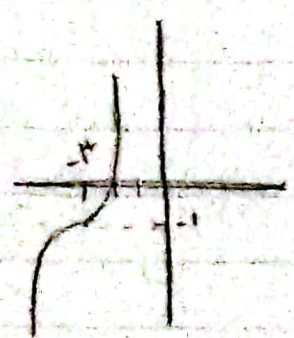
$$a^r - r \gg 1$$

$$a^r \gg r$$

$$a \gg r$$

$$a < -r$$

↪



در بازه $(-r, +\infty)$ مثبت است

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$$k = -r$$

$$f(f(n)) \leq f(\sqrt{n})$$

$$n + \sqrt{n} - r \leq \sqrt{n}$$

- 1

$$n - r \leq 0 \quad n \leq r \quad \textcircled{1}$$

$$\sqrt{n} \rightarrow n \gg 0 \quad \textcircled{2}$$

$$\textcircled{1} \cap \textcircled{2} \rightarrow 0 \leq n \leq r$$

$$0/1, r$$

مجموعه



$$\frac{\sqrt[3]{4\cos^2 n - 1}}{r} - \sqrt[3]{4\cos^2 n - 1}$$

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$$0 \leq \cos^2 n \leq 1 \quad 0 \leq 4\cos^2 n \leq 4$$

$$-1 \leq 4\cos^2 n - 1 \leq 3$$

$$-1 \leq \sqrt[3]{4\cos^2 n - 1} \leq 3$$

$$\text{Max} = r - \bar{r} = F - \frac{1}{F} = \frac{10}{F}$$

$$\text{Min} = \bar{r} - r = \frac{1}{r} - r = -\frac{r}{r}$$

$$\frac{10}{F} + \frac{r}{r} =$$

$$\frac{10}{F} + \frac{r}{F} = \frac{r+10}{F}$$

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$$f(n) = n - [n+r] = n - [n] - r$$

$$0 \leq n - [n] < 1 \quad -r \leq n - [n] + r < -1$$

$$g(n) = r^{n-1} - r^{-n-1}$$

$$g(-r) = r^{-r} - r = \frac{1}{r} - \frac{1}{r} = -\frac{10}{r}$$

$$g(-1) = r^{-r} - r^0 = \frac{1}{r} - 1 = -\frac{r}{r}$$

$$Rg(n) = \left[-\frac{10}{r}, -\frac{r}{r}\right)$$