

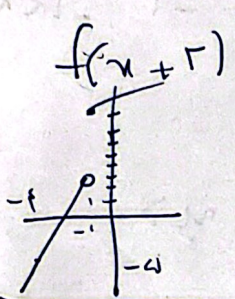
ضالحي حسابان - دوازهه سې

(۱۰۵)

$$\sqrt{f(r-n) - f(n+1)}$$

$$f(r-n) \geq f(n+1) \rightarrow r-n \geq n+1 \rightarrow r \geq 2n+1$$

$n \leq 1$



$$f(x+r) \begin{cases} r \geq 1 \\ f(x-1) & n < 1 \end{cases}$$

$$f(n) \begin{cases} r(n+r) \geq 0 & n+r \geq 1 \\ & n \geq -1 \\ f(n+r) - 1 & n+r < 1 \\ & n < -1 \end{cases}$$

$$f(n) < n^r \rightarrow n^r > (n^r + n)^r \rightarrow r \neq 0$$

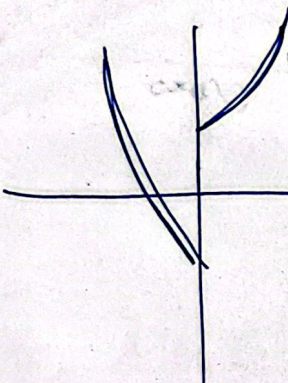
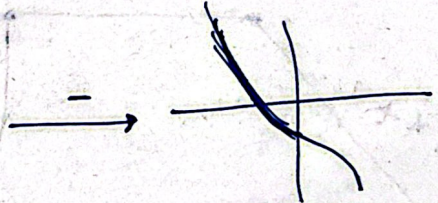
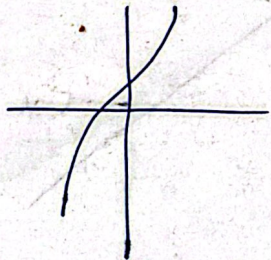
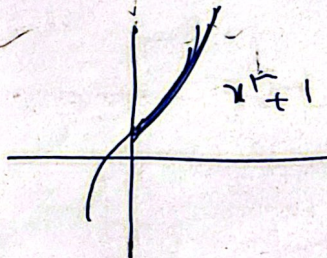
دې ټولې معادلات د n په اړه دي

$$n > n^r + n \rightarrow n^r < 0 \rightarrow n < 0$$

(۱۰۶)

$$y = \ln\left(n^r + \frac{1}{n}\right) \begin{cases} n > 0 \rightarrow n^r + 1 \\ n < 0 \rightarrow -n^r - 1 \end{cases}$$

(۱۰۷)



$$-(n^r + 1)$$

غڼه کيښودنه

حل ٢

$$g = \frac{r_{n+1}}{h|1 - r_{n+1}|}$$

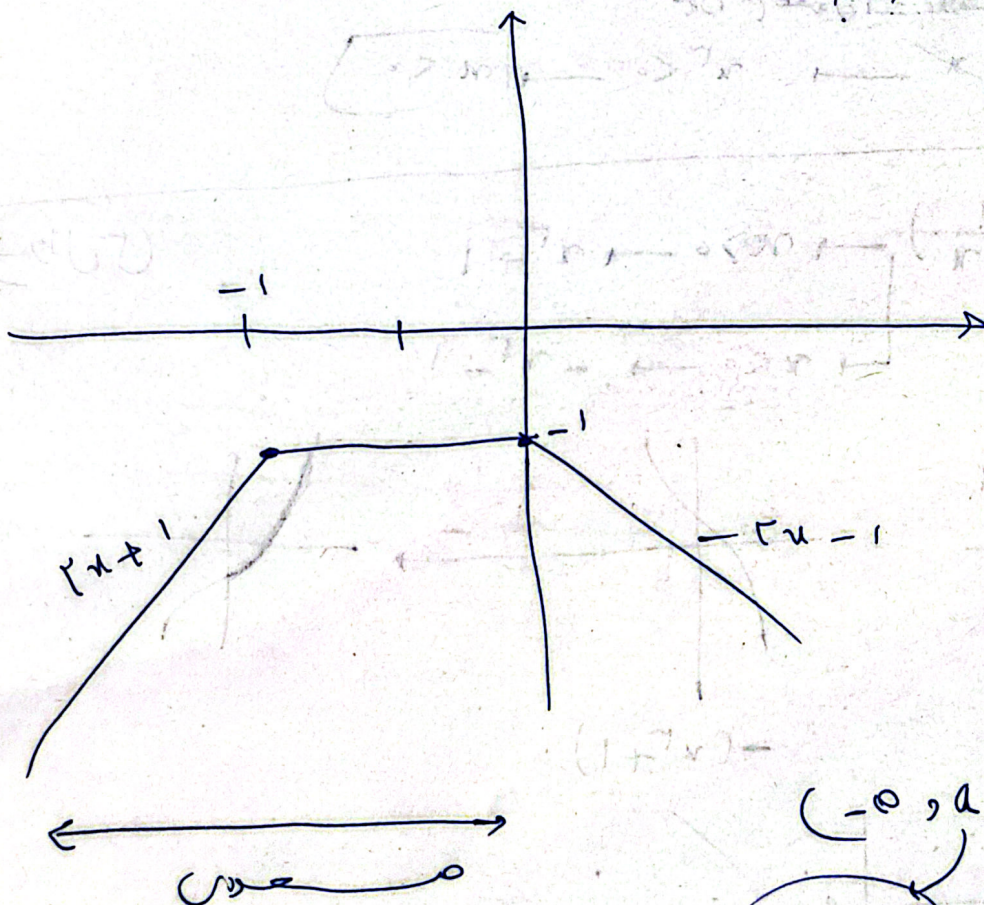
$\swarrow$ $\searrow$
 0 -1

$$\frac{r_{n+1}}{-r_{n+1} + r_{n+1}} = \frac{r_{n+1}}{1} = r_{n+1} \quad n \leq 0$$

$$\frac{r_{n+1}}{-r_{n+1} - r_{n+1}} = \frac{r_{n+1}}{-2r_{n+1}} = -1 \quad -1 < n < \infty$$

$$\frac{r_{n+1}}{-r_{n+1} + r_{n+1}} = -r_{n+1} \quad n > 0$$

رسم تابع



معر $(-1, 1]$
 $a = 0$
 طبقاً

$$y = \log_{\frac{1}{r}}^{x^r - rx - 1} \rightarrow \log_{r^{-1}}^{x^r - rx - 1}$$

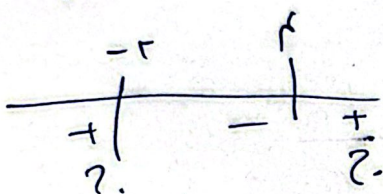
سوال ۷

$$y = -(\log_r^{x^r - rx - 1})$$

این تبدیل اینست که ما
به تندی معکوس می‌کنیم

$$\log_b^a >$$

$$\rightarrow x^r - rx - 1 > 0 \rightarrow (x-4)(x+2) > 0$$



$$x > 4 \rightarrow \log_r^{x^r - rx - 1} \rightarrow \text{معکوس می‌کنیم}$$

$$x < -2 \rightarrow x^r - rx - 1 \rightarrow \text{تندی می‌کنیم} \rightarrow \text{حق}$$

$$x < -2$$

$$f(x) = (a^r - r)^x$$

سوال ۹

$$a^r - r > 1 \rightarrow a^r > r + 1 \rightarrow a > r \vee a < -r$$

الف) یکم از معکوس می‌کنیم

~~$$a^r - r > 1$$~~

$$a^r - r > 1 \rightarrow a^r > r + 1 \rightarrow a > r \vee a < -r$$

ب) یکم از معکوس می‌کنیم

$$a^r - r = 0$$

$$a^r = r \rightarrow a = \pm \sqrt[r]{r}$$

یکم از می‌کنیم

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

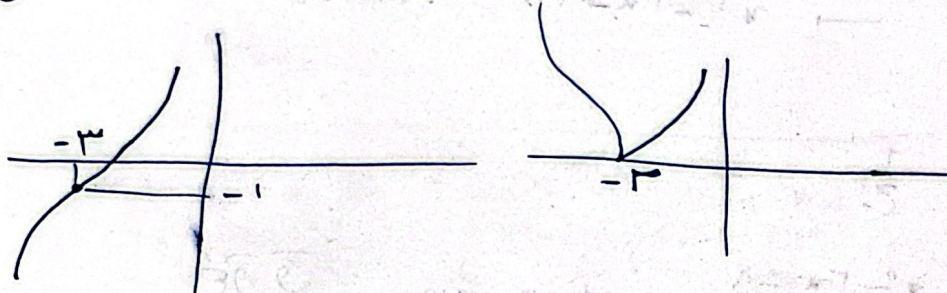
(Vb)

$$\left[\begin{matrix} -5 \\ -1 \end{matrix} \right] \quad |f(x)| \quad (k \rightarrow +\infty)$$

y_r

$$(x+r)^r \rightarrow (x+r)^{r-1}$$

$$y = |f(x)| \rightarrow y = |(x+r)^{r-1}|$$



$$|(x+r)^{r-1}| = 0 \rightarrow (x+r)^{r-1} = 0$$

$$(x+r)^r = 1 \xrightarrow{r \neq 0} x+r=1 \rightarrow \boxed{x = -r}$$

$$\boxed{k = -r}$$

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

(Vb)

$$f \circ f(x) \leq f(r)$$

$$f(x) \leq r \rightarrow x + \sqrt{x} - r \leq r$$

$$x - r \leq 0 \rightarrow \boxed{x \leq r}$$

$$\bar{x} \rightarrow x \geq 0 \quad \boxed{0 \leq x \leq r}$$

مجموع

$$f(z) = \sqrt{a \cos^2 z - 1} - z \sqrt{1 - a \cos^2 z} \rightarrow K = [a, b] \quad \text{بطل } a < b$$

$$-1 < \cos^2 z < 1 \rightarrow 0 \leq a \cos^2 z \leq a \rightarrow -1 \leq a \cos^2 z - 1 \leq a - 1$$

$$1 \leq z \sqrt{a \cos^2 z - 1} \leq z \rightarrow z \sqrt{a \cos^2 z - 1} = 1$$

$$f(z) = z^+ - z^{-1} \quad -1 \leq z^+ \leq z$$

معرى متحول

$$R_{f(z)} = [f(-1), f(1)] \rightarrow \left[-\frac{1}{2}, \frac{1}{2}\right]$$

$$b - a = \frac{1}{2} - \left(-\frac{1}{2}\right) = \frac{1}{2} \quad \begin{matrix} z^+ \text{ معرئى} \\ z^{-1} \text{ متحول} \end{matrix}$$

$$f(z) = \frac{z - |z|}{z} \quad 0 \leq |z| < 1$$

$$\begin{cases} z = 2 \rightarrow (-2) \\ z \neq 2 \rightarrow (-1) \end{cases}$$

سوال 10

$$\frac{z^{-2} - z^2}{z} = \frac{1}{z} - z = \frac{1}{z} - \frac{1}{z} = -\frac{1}{z} \quad \left(-\frac{1}{z}\right)$$

$$\frac{z^{-1} - z^1}{z} = \frac{1}{z^2} - z = -\frac{1}{z^2} - z$$

$$\boxed{-\frac{1}{z^2} < K < -\frac{1}{z}}$$