

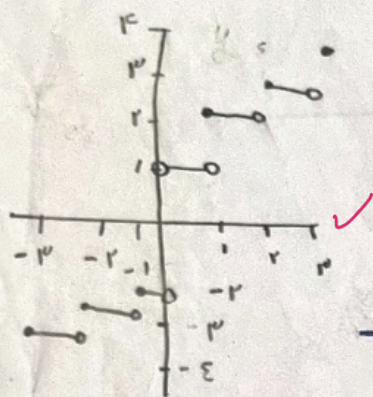
۱۹, ۵

$$u + \frac{n}{r} \leq \alpha$$

$$\begin{aligned} & \cdot \sin^r u \leq 1 \rightarrow \sin^r u \leq 1 \rightarrow -1 \leq \sin^r u \leq 1 \rightarrow R \in [-1, 1] \checkmark \\ & -1 \leq \cos^r u \leq 1 \rightarrow -1 \leq \cos^r u \leq 1 \rightarrow \sqrt[r]{\cos^r u} - \varepsilon \leq -1 \rightarrow [-r, -1] \checkmark \end{aligned}$$

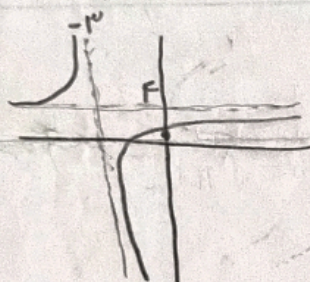
$$y = \frac{u}{|u| + [u]} \rightarrow [-r, r] \rightarrow [-r, 0) \rightarrow y = -1 + [u]$$

$$[0, r] \rightarrow y = 1 + [u]$$



$$y = \left| \frac{r+1}{k+r} \right|$$

$$(0, \frac{1}{r})$$



$$r-k+y-1 \rightarrow y = k+r \checkmark$$

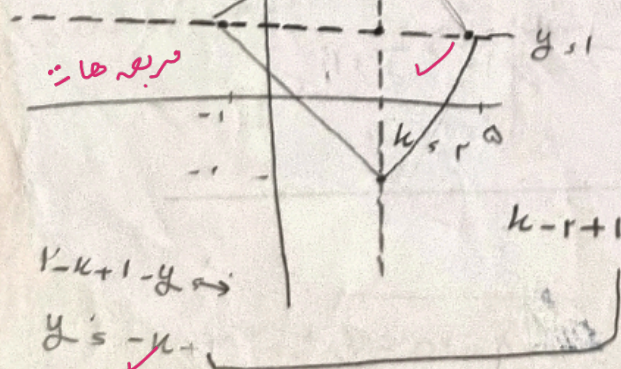
$$k-r+y-1 \leq r, y = -k+r \checkmark$$

$$-n+y \leq k-\varepsilon \rightarrow r_n \leq k \leq n \rightarrow y = 1 \quad (0, 1)$$

$$k+r-y-1 \rightarrow r_n = -r \rightarrow k = -1 \rightarrow y = -1 \quad (-1, 0)$$

$$k-r+1-y \leq r \rightarrow y = k-r$$

$$-n, n-\varepsilon \rightarrow r_n + \varepsilon \rightarrow n = +r \rightarrow y = -r \quad (r, -r)$$



$$\sqrt{n+1} = 1$$

به ازای چه n ای $\leq$ ؟

$y = k + \frac{1}{k} + r\sqrt{k+\frac{1}{k}}$
 $\square^r + r\square$ ✓
 کمترین مقدار $\rightarrow 1 \rightarrow 1 + r$
 بیشترین مقدار $\rightarrow +\infty$
 $\frac{-b}{2a} \rightarrow \frac{-r}{r} = -1 \rightarrow$
 $\rightarrow (1, 1+r)$
 معنی آخر...

ب) $g_s(r - \sin k)(1 + \sin k) \rightarrow g = \sin^2 k + r \sin k + r$
 $\rightarrow -1 \rightarrow -1 - r + r = 0$
 $\rightarrow 1 \rightarrow -1 + r + r = 2r$
 $\frac{-b}{2a} \rightarrow \frac{-r}{r} = -1 \rightarrow r$
 $[0, k]$ ✓

$f(x) = -\frac{1}{p}x + 1 \rightarrow$
 $1 \rightarrow \frac{p \cdot 9}{p}$
 $r \rightarrow \frac{p \cdot 4}{p}$
 $s \rightarrow \frac{p \cdot 0}{p}$
 $t \rightarrow \frac{p \cdot 5}{p}$
 $u \rightarrow \frac{p \cdot 1}{p}$
 $v \rightarrow \frac{p \cdot 2}{p}$
 $w \rightarrow \frac{p \cdot 3}{p}$
 $x \rightarrow \frac{p \cdot 4}{p}$
 $y \rightarrow \frac{p \cdot 5}{p}$
 $z \rightarrow \frac{p \cdot 6}{p}$
 $\frac{(p \cdot 9 + p \cdot 1) \times 9}{p} = 10 \times 9 = 90$
 $\rightarrow \frac{p \cdot 5}{p} = 5$ ✓

$\frac{r}{-r+1} \rightarrow a, r, b, c, b, 1$
 $r, b, c, 1$
 $\frac{r}{-r+1} = 1 \rightarrow r = 1$
 $g(x) = \sqrt{x^2 + 1} \rightarrow$

$\sqrt{[r, +\infty)} \rightarrow [r, +\infty)$ ✓

$f(x) = \frac{x^p - \varepsilon x}{x+r} \rightarrow \frac{x(x+r)(x-r)}{(x+r)} \rightarrow x(x-r)$
 $x \leq -r$
 $R = \{-r, \varepsilon\}$
 $\frac{-r+\varepsilon}{-r} = \frac{r}{-r} = -1 \rightarrow f(-1) = [14]$ ✓
 $x^p - r = 1 \rightarrow x^p - r - 1 = (x - \varepsilon)(x + \varepsilon)$
 $x^p - r = 1 \rightarrow \frac{-b}{2a} = \frac{r}{r} = 1$ ✓
 $1 - r = -1$

$y = \sqrt{x^p + ax^r + bx - 1} \rightarrow y = \sqrt{(x-r)^p}$
 $a = -4, b = 11 \rightarrow -4 \rightarrow -4 - r = -1$
 $11 \rightarrow 11 - r = 1 \rightarrow R = [-1, 10]$ ✓

$$\frac{\cancel{1}k^p + 1k^p + 4u+1}{\cancel{1}k^p + 1k^p + 2u} \cdot \frac{r_k^p + \varepsilon_{k+1}}{r_k + 1}$$

$$\rightarrow y = \frac{r(r_k+1)(r_k^p + \varepsilon_{k+1})}{(r_k^p + \varepsilon_{k+1})(r_k^p + \varepsilon_{k+1})} \quad \text{ادامه سوال ۲}$$

$$\frac{r_k^p + \varepsilon_{k+1}}{r_k^p + \varepsilon_{k+1}}$$

$$y = \frac{r}{r_k + 1}$$

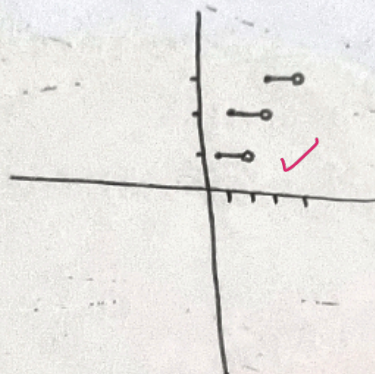
و.

$$y = [n] + [n + \frac{1}{r}] \quad [\frac{1}{r}, r)$$

$$\frac{1}{r} \rightarrow 0 + 1 \leq 1$$

$$1 \rightarrow 1 + [\frac{r}{r}] \leq r$$

$$\frac{r}{r} \rightarrow 1 + r \leq r$$



ملاحظه

(۲)

$$\text{الف) } f(n) = n + \frac{1}{n} + r \sqrt{n + \frac{1}{n}}$$

-۵

$$\begin{cases} \min \square = \sqrt{r} \rightarrow f(n) = r + r\sqrt{r} \\ \max \square \sim \infty \rightarrow f(n) = +\infty \\ \square = -\frac{b}{r_n} = -1 \quad \times \end{cases}$$

$$\Rightarrow R_f = [r + r\sqrt{r}, +\infty)$$