

• بازم رفتن 13

• سواکت 1

• ستاره برداری

الف) $y^r - r u^r = r u - 1$ $\int y^r = r u^r + r u - 1 \Rightarrow y^r = r u^r + r u - 1$
 $y^r = r u^r + r u - 1$
 $3: y^r$
 $\rightarrow n \cos y = y \cos n$
 $\frac{y}{r} - \cos y = y \cos \frac{y}{r} = \frac{y}{r} \cos y$
 $\cos y = 1 \oplus y = k\pi + \frac{\pi}{r}$
 ج) $\frac{u+y}{r} = \sqrt{u y}$ $u, y > 0$ $\rightarrow$ $\frac{u+y}{r} = \sqrt{u y}$
 $u+y = r \sqrt{u y} \Rightarrow u+y = r \sqrt{u y}$
 $(\sqrt{r} - \sqrt{y})^2 = 0 \rightarrow \sqrt{r} = \sqrt{y} = 0 \rightarrow r = y = u$
 د) $u^2 + r u = y^r - r y$
 $u(y^r + r) - y(y^r + r) = 0$
 $(y^r + r)(u - y) = 0 \rightarrow u = y$

1

الف) $|y| + u^r = r y$
 $y > 0 \rightarrow u^r = r y$ $\checkmark$
 $y < 0 \rightarrow u^r = r y \rightarrow \frac{r}{r} = y \rightarrow X$
 $-1 [y] + [u] = 1 \rightarrow u = r$
 $[-1] + [r] = 1 \Rightarrow [y] = -1$
 $1 \leq y < 2$ $\Rightarrow$ $\frac{r}{r} = y \rightarrow X$

2

$L_{n,r} = \begin{cases} r u^r = b & |n-1| \geq r \\ a + r u & -\leq n \leq r \end{cases}$
 $a+b = ?$
 $L_{n,r} = \begin{cases} r u^r - b & n > r \\ a + r u & -r \leq n \leq r \\ r u^r - b & n < -r \end{cases} \Rightarrow n = r$
 $r(r)^r - b = a + r(r)$
 $(r^r - b) = a + r$
 $[r^r = a + b]$

3

$L_{n,r} = \sqrt{a - b u - u^r}$ $\frac{a}{a} = \frac{c}{a} = \frac{a}{-1} = -a \rightarrow a \times b = -a$
 $b = -1$
 $P_L = [b, a] \quad (a \neq 0, b \in \mathbb{Z})$ $S = \frac{-b}{a} = -\frac{(-b)}{-1} = -b \rightarrow a + b = -b$
 $a + b = ?$
 $a - 1 \geq 1$
 $a = r$
 $a + b \geq r - 1 = 1$

4

• $\frac{a}{a} = \frac{c}{a} = \frac{a}{-1} = -a \rightarrow a \times b = -a$
 $y = \frac{a}{\sqrt{a u^r + b u + c}}$ $\sqrt{a u^r + b u + c} > 0 \Rightarrow \sqrt{b u + c} > 0$
 $n = r$

5

$P_y = (-a, r)$
 $r a + c - r |b| = ?$
 $r b + c \geq 0 \rightarrow c \geq -r b \rightarrow b < 0$
 $r a + c - r |b| = r b - r b = b$

$$y = \sqrt{\frac{r+a}{n+b}} + a$$

$$\frac{r+a}{n+b} + a =$$

$$\frac{r+a+a(n+b)}{n+b}$$

$$\frac{r+a+an+ab}{n+b}$$

$$D_y = (r, +\infty)$$

$$b=0$$

دستور تابع را در صورتی که $b=0$ قرار دهیم و ببینیم چه می شود

$$\frac{n(r+a)+r+ab}{n+b} \begin{cases} r+a > 0 \rightarrow a > -r \\ n+b > 0 \rightarrow b > -r \end{cases}$$

6

$$الف) y = \sqrt{n^2 - 1}$$

$$\Rightarrow y = \frac{1}{\sqrt{|n|-1}}$$

$$n^2 - 1 \geq 0 \rightarrow n \geq 1 \text{ یا } n \leq -1$$

$$\sqrt{|n|-1} > 0 \rightarrow |n|-1 > 0 \rightarrow |n| > 1$$

$$\frac{-1}{-} \quad \frac{0}{0} \quad \frac{1}{+}$$

$$D_y = (-\infty, -1) \cup (1, +\infty)$$

$$D_y = [-1, 0) \cup (0, 1]$$

7

$$الف) y = \sqrt{\frac{1}{|n| - [n]}}$$

$$\Rightarrow \sqrt{n} + \sqrt{y} = 9$$

$$\sqrt{y} = 9 - \sqrt{n}$$

$$9 - \sqrt{n} \geq 0$$

$$\sqrt{n} \leq 9$$

$$n \leq 81$$

$$D_y = [0, 81]$$

$$n - [n] \neq 0 \Rightarrow n \neq [n]$$

$$D = \mathbb{R} - \mathbb{Z}$$

8

$$y = \frac{1}{\sqrt{[r_n - \frac{1}{r}] + [r_n + \frac{r}{r}]}}$$

$$[r_n - \frac{1}{r}] + [r_n + \frac{r}{r}] > 0$$

$$[r_n - \frac{1}{r}] + [r_n + r] - r > -r$$

$$2[r_n - \frac{1}{r}] > -r$$

$$[r_n - \frac{1}{r}] > -\frac{r}{2}$$

$$r_n - \frac{1}{r} > -\frac{r}{2} \rightarrow r_n > \frac{1}{r} - \frac{r}{2} \rightarrow n > \frac{1}{2}$$

$$D_y = [\frac{1}{2}, +\infty)$$

9

$$y = \sqrt{1 - \ln(r_n - a)}$$

$$\ln(r_n - a) \rightarrow r_n - a > 0 \rightarrow r_n > a$$

$$D_y = (b, c]$$

$$1 - \ln(r_n - a) \geq 0 \Rightarrow \ln(r_n - a) \leq 1$$

$$r_n - a \leq e \rightarrow r_n \leq 1 + a \rightarrow a \leq \frac{1+a}{r}$$

$$c - b = ?$$

$$c = \left(\frac{1+a}{r} \right) > n > \left(\frac{a}{b} \right) \Rightarrow c - b = \frac{1+a}{r} - \frac{a}{r} = \frac{1}{r}$$

10