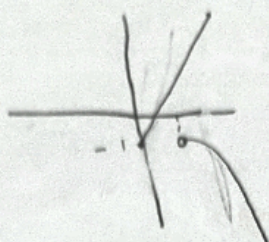
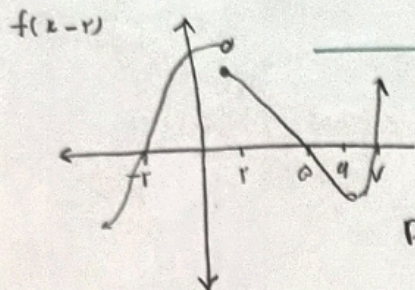


$$k = \begin{cases} ky-1 & y \geq 0 \\ y^2 & y > 1 \end{cases} \rightarrow$$



تابع هست زیرا این نمودار همواره صعودی است
پس بدین نمودار تابعی تابع صعودی است و تابع
هست.



$$g(u) = \frac{\sqrt{k(f(u)-2)}}{f(u)}$$

$$\begin{array}{ccccccc} -4 & -2 & 0 & 2 & 4 & 6 & 7 \\ \hline -\frac{1}{2} & + & \frac{1}{2} & - & \frac{1}{2} & - & \frac{1}{2} & + \end{array}$$

(2)

$$D_g = (-4, -2] \cup [2, 3) \cup (7, +\infty)$$

$$f(u) = \frac{ku^2 - ku + 2}{ku^2 - \varepsilon u}$$

$$ku^2 - \varepsilon u \neq 0 \rightarrow k(k^2 - \varepsilon) \neq 0 \rightarrow D_f = \mathbb{R} - \{0, \frac{2}{k} - 2\}$$

(3) الف

$$ku^2 - ku + 2 = 0 \rightarrow \Delta < 0 \rightarrow \text{ریشه ندارد}$$

$$\begin{array}{ccc} -2 & 0 & 2 \\ \hline -\frac{1}{2} & + & \frac{1}{2} & - & \frac{1}{2} & + \end{array}$$

$$D_f = (-2, 0) \cup (2, +\infty)$$

(ب)

$$\omega) \sqrt{\frac{k-2}{k^2 - k^2 - 1}}$$

$$k^2 - k^2 - 1 = (k-1)(k+1) = 0 \rightarrow k = 1 \text{ or } k = -1$$

(ک)

$$k^2 = \varepsilon \rightarrow k = \pm \sqrt{\varepsilon}$$

$$\begin{array}{ccc} -2 & 2 \\ \hline -\frac{1}{2} & + & \frac{1}{2} & + \end{array}$$

$$D = (-2, 2) \cup (2, +\infty) \cup (-\sqrt{\varepsilon}, +\infty) - \{2\}$$

$$k \rightarrow k - 1[-k] = 0 \rightarrow 1[-k] = \varepsilon \rightarrow [-k] = 2 \rightarrow 1 < -k < 3 \rightarrow -2 < k < -1$$

$$f(u) = \frac{\sqrt{k(k^2-1)}}{\sqrt{|k|+k}}$$

$$1/|k|+k > 0 \rightarrow \mathbb{R}^+ \quad k(k^2-1) > 0 \rightarrow \begin{array}{ccc} -1 & 0 & 1 \\ \hline - & + & - & + \end{array}$$

(5)

$$g = \sqrt{(u-1)(u-2)}$$

$$0 \leq u-1 < 1 \rightarrow 1 \leq u < 2$$

$$\begin{array}{ccc} 1 & 2 \\ \hline + & 0 & + \end{array} \rightarrow D = \mathbb{R}$$

(4)

$$g = \sqrt{|u-1|} [u-1] \rightarrow 0 \leq u-1 < 1 \rightarrow 1 \leq u < 2$$

$$\begin{array}{ccc} 1 & 2 & 3 \\ \hline - & + & 0 & + \end{array} \rightarrow D = [3, +\infty) \cup \{1\}$$

$$\frac{1}{|u-r|-1-k} \rightarrow |u-r|-1-k=0 \rightarrow |u-r|-1=k \quad (1)$$

$$\textcircled{1} |u-r|=k+1 \rightarrow k+1 \geq 0 \Rightarrow k \geq -1 \quad (2) |u-r|=-k+1 \rightarrow -k+1 \geq 0 \Rightarrow -k \geq -1 \Rightarrow k \leq 1$$

$$\begin{cases} \rightarrow u-r=k+1 \rightarrow u \leq k+r \\ \rightarrow u-r=-k+1 \rightarrow u \geq -k+1 \end{cases} \quad \begin{cases} \rightarrow u-r=k+1 \leq k \leq -k+r \\ \rightarrow u-r=-k+1 \leq k \leq k+1 \end{cases} \quad \boxed{k=1}$$

اگر مقدار k صفر باشد فقط در عدد u در دامنه نیست و اگر مقدار k یک باشد در دو عدد u در دامنه قرار دارد

$$f(n) = \frac{k^r + k^{n+r}}{k^r + k^{n+r}} \rightarrow \frac{k^r + k^{n+r}}{k+1} = (k+1)(n+r) = \boxed{k=-1} \quad \boxed{k=2}$$

$$\frac{k+1}{k-1} \rightarrow k+1 \leq \boxed{k=1}$$

$$n = -1-1-r+1 = -r \rightarrow k^r + qn - q \rightarrow \Delta > 0 \rightarrow \text{ریشه دارد}$$

$$y = \log_{k+1} \log_k \frac{1}{k^r} \quad k > 0, k \neq 1, k+1 > 0 \rightarrow k > -1, k \neq 0 \setminus$$

$$D = (0, +\infty) - \{1\}$$

$$-0 \leq k \leq r \rightarrow q \leq k^r \leq r^q \rightarrow r^q \leq k^r \leq r^q \rightarrow r^q \leq k^{r-1} \leq r^q$$

$$D = [r^q, r^q]$$