

$$f(u) - kf(u) = r|u| + 1$$

$$f(u) + kf(-u) = r|u| + 1 \rightarrow r|u| + 1 \rightarrow f(-u) - kf(u), f(u) + kf(-u) \rightarrow f(u), f(-u) \rightarrow$$

$$k \rightarrow -k \rightarrow k = 0 \rightarrow f(\cdot) = r|\cdot| + 1 \in [1]$$

$$f(u) + f(\cdot) = k^r - r^r u + q \rightarrow f(\cdot) = q \rightarrow f(\cdot) = r^r \rightarrow f(u^r) + r^r = k^r - r^r k^r + q \rightarrow$$

$$f(u^r), k^r - r^r k^r + r^r \xrightarrow{k^r \leq 1} k^r - r^r k^r + r^r, (k-1)(k-r^r) \leq 0, k < 1, k > r^r \rightarrow k^r - r^r k^r + r^r \rightarrow k^r - r^r k^r + r^r \rightarrow k^r - r^r k^r + r^r$$

$$y = \frac{k^r + k + r}{k-1} \rightarrow yk - y = k^r + k + r \rightarrow k^r + k(1-y) + r + y = 0 \xrightarrow{\Delta \geq 0}$$

$$y \pm \sqrt{(1-y)^r - r(r+y)} \geq 0 \rightarrow 1 + y^r - ry - 1 - r^2 y \geq 0 \rightarrow y^r - ry - r \geq 0 \rightarrow (y-r)(y+1)$$

$$\frac{-1}{+1} \frac{r}{+1} \rightarrow (-\infty, -1] \cup [r, +\infty)$$

$$y, k^r \leq 0_{n+1} \rightarrow \left| \frac{-b}{ra} = \frac{\omega}{r} \right|$$

$$\frac{r\omega}{\lambda} - \frac{r\omega}{r} + 1 \leq \frac{r\omega}{\lambda} - \frac{\omega}{\lambda} + \frac{1}{\lambda} \leq -\frac{1r}{\lambda} \rightarrow \left[ \frac{1r}{\lambda}, +\infty \right)$$

$$y, \sqrt{-k^r + 4u} = 0 \rightarrow \left| \frac{-b}{ra} = \frac{-4}{-r} = r \right|$$

$$-9 + 11 - \Delta, r \rightarrow \sqrt{(-\infty, 1]} \rightarrow [-1, 1]$$

$$y, \sqrt{k^r - r^r k^r + \varepsilon u} \rightarrow \sqrt{r} \rightarrow [r, +\infty)$$

$$y, |y(k^r - r^r k^r + r^r + \varepsilon)| \xrightarrow{R \gg 1} |y| \rightarrow [-1, +\infty)$$

$$\text{اگر } y, \frac{r_{n+1}}{k_{n+1}} \rightarrow R - \left\{ \frac{a}{r} \right\} \rightarrow R - \left\{ \frac{r}{r} \right\}$$

$$y, \sqrt{\frac{\varepsilon u - 1}{k - r}} \rightarrow \sqrt{R - \left\{ \frac{a}{r} \right\}} \rightarrow [r, +\infty) - \{r\}$$

$$y, \frac{k^r + \varepsilon}{\sqrt{k^r + r}} \rightarrow \sqrt{k^r + r} + \frac{1}{\sqrt{k^r + r}} \rightarrow \frac{r}{\sqrt{r}}, \frac{r\sqrt{r}}{r} \rightarrow \left[ \frac{r\sqrt{r}}{r}, +\infty \right)$$

$$k^r + \frac{1}{k^r + \varepsilon} \xrightarrow{+\varepsilon} k^r + \varepsilon + \frac{1}{k^r + \varepsilon} - \varepsilon \xrightarrow{k^r \rightarrow 0} 1 + \frac{1}{\varepsilon} - \varepsilon, \frac{1}{\varepsilon} \rightarrow \left[\frac{1}{\varepsilon}, +\infty\right)$$

$$y, \frac{1}{k^r - 1} \left[ \begin{array}{l} k^r \rightarrow 0 \rightarrow -\frac{1}{1 - \varepsilon} - \varepsilon \\ k^r \rightarrow +\infty \rightarrow \mu \end{array} \right] \rightarrow k^r \searrow \rightarrow (-\infty, -\varepsilon] \cup (\mu, +\infty) \quad (4)$$

$$y, \frac{r \sin u + 1}{\sin u - \mu} \left[ \begin{array}{l} \sin u \rightarrow 1 \rightarrow \frac{1}{1 - \mu} - \mu \\ \sin u \rightarrow -1 \rightarrow -\frac{1}{1 - \mu} - \mu \end{array} \right] \rightarrow \sin u = \mu \alpha \rightarrow [-\mu, -\frac{1}{\mu}] \quad (5)$$

$$y, \left| \frac{r_{k-1}}{r_k} \right| \rightarrow \left| \frac{r_{k-1}}{r_k} \right| \rightarrow r_k |y|, r_{k-1} \rightarrow r_k |y| - r_{k-1} \rightarrow k(|y| - 1) - 1 \rightarrow k(|y| - 1) - 1$$

$$k = \frac{-1}{r_k |y| - 1} \xrightarrow{+ \frac{1}{r_k}} \rightarrow y \geq 0 \rightarrow R\left[-, \frac{\mu}{\varepsilon}\right] \quad (6)$$

$$y, \sqrt{\frac{r_k - 1}{r_k - 1}} \rightarrow \sqrt{\frac{r_k - 1}{r_k - 1}} \rightarrow R = \sqrt{\frac{q}{\varepsilon}} \cdot \sqrt{\frac{\mu}{r}}$$

$$y, k|u| - r_u$$

$$k > 0 \rightarrow k^r - r_u \left| \frac{-b}{r_u}, 1 \right| \rightarrow \text{Graph} \rightarrow \textcircled{R}$$

$$k = 0$$

$$k < 0 \rightarrow -k^r - r_u \left| \frac{-b}{r_u}, \frac{\mu}{r} - 1 \right|$$

