

۲۰

۲۱

$$-2 \leq \frac{u_{n+1}}{a} \leq 2 \rightarrow -1 \leq u_{n+1} \leq 2 \rightarrow -12 \leq u_n \leq 11 \rightarrow -4 \leq u \leq 4 \quad (۲)$$

$$\Rightarrow D: [-4, 4]$$

$$-2 \leq u \leq 2 \rightarrow u(-2) - 2 \leq u_{n-2} \leq u(2) - 2 \rightarrow -2-2 \leq u_{n-2} \leq 2-2$$

$$\rightarrow -4 \leq u_{n-2} \leq 0$$

$$\Rightarrow -1 \leq u_{n-1} \leq 1$$

$$D: [-1, 1]$$

$$-1 \leq u < 2 \Rightarrow \frac{-u+1}{2} \leq \frac{u_{n+1}}{2} < \frac{u+2}{2} \Rightarrow -1 \leq \frac{u_{n+1}}{2} < 2$$

$$-1 \leq 2-u_n < 2 \Rightarrow -3 \leq -u_n < 0 \Rightarrow \frac{u}{a} \geq u > -\frac{u}{a} \quad D: \left(-\frac{u}{a}, \frac{u}{a}\right]$$

$$\begin{cases} -1 \leq u_{n+1} \Rightarrow -2 \leq u_n \Rightarrow -\frac{u}{2} \leq u \\ 2 \leq u_{n+1} \Rightarrow 1 \leq u_n \Rightarrow u \leq \frac{1}{2} \\ 0 \leq u_{n+1} \Rightarrow -\frac{1}{2} \leq u \end{cases}$$

$$D: \begin{cases} u(0) + u \leq 2 \\ u(1) + u \leq 2 \end{cases}$$

$$\begin{cases} 2-u_n \leq 1 \Rightarrow \frac{1}{2} \leq u \\ 2-u_n \leq 2 \Rightarrow u \leq -1 \\ 2-u_n \leq 2 \Rightarrow u=0 \end{cases}$$

$$D: \begin{cases} 2 \times \frac{1}{2} \leq 1 \\ 2 \times \frac{1}{2} \leq 1 \end{cases}$$

$$y \leq a(n-t)^2 + p \xrightarrow{a \leq \frac{1}{a}} \frac{1}{a}(n-t)^2 + p \rightarrow a \leq (n-t)^2$$

$$\Rightarrow (n-t) \leq \sqrt{a}$$

$$\Rightarrow \begin{cases} n-t \leq \sqrt{a} \Rightarrow n \leq \sqrt{a} \\ n-t \leq -\sqrt{a} \Rightarrow n \leq -1 \end{cases}$$

$$r_m + r = 1 \Rightarrow -1 \leq r_m \Rightarrow -\frac{1}{r} \leq x$$

$$1 - rF(x) \geq 1 - rK \Rightarrow -V$$

$$\begin{aligned} C(a, B) &\leq (-\frac{1}{r}x - V) \\ \Rightarrow -\frac{1}{r}x - V &\leq \frac{V}{r} \end{aligned}$$

(2) (✓)

$$a < n-1 \leq r \Rightarrow a+1 \leq n \leq \omega$$

$$-1 \leq n+r < b \Rightarrow -r \leq n < b-1$$

$\Rightarrow$

$$b-1 \leq \omega \Rightarrow b \leq y$$

$$a+r \leq r \Rightarrow a \leq -r$$

$$\left. \begin{aligned} b-1 \leq \omega &\Rightarrow b \leq y \\ a+r \leq r &\Rightarrow a \leq -r \end{aligned} \right\} a-b \leq -r-y \leq -q$$

(2) (✓)

$$\left[-\frac{r}{r}+1, \frac{r}{r}+1\right] \Rightarrow \left[-\frac{1}{r}, \frac{1}{r}\right] \cdot F(n) \Rightarrow D \left[-\frac{1}{r}, \frac{1}{r}\right]$$

$$-1 \leq F(n) \leq 1 \Rightarrow -r \leq r F(n) \leq r \Rightarrow -\sqrt{r} \leq r F(n) - r \leq 1 - r \stackrel{!!}{\Rightarrow} [0, \infty]$$

$$\Rightarrow [0, \sqrt{r}] \subset \mathbb{R}$$

$$f(n) F(n-r) + 1 \Rightarrow -g(n) \leq \left| \frac{n-1}{r_{n-r}} \right| + 1 \Rightarrow n+1 \leq \left| \frac{n-1}{r_{n-r}} \right| < \cdot$$

$$n+1 < \cdot \Rightarrow n < -1$$

$$\Rightarrow n+1 + \frac{n-1}{r_{n-r}} < \cdot \Rightarrow \frac{(n+1)(r_{n-r}) + (n-1)}{r_{n-r}} < \cdot$$

$$\Rightarrow \frac{r_{n-r} + 1}{r_{n-r}} < \cdot$$

$$\frac{-\sqrt{r}}{r} \leq \frac{\sqrt{r}}{r} \Rightarrow (-\infty, -\sqrt{r}]$$