

$$-2 \leq \frac{v_{n+1}}{\omega} \leq 2 \rightarrow -1 \leq v_{n+1} \leq 2 \rightarrow -12 \leq v_n \leq 11 \rightarrow -4 \leq n \leq 6$$

$$\Rightarrow D_s[-4, 6]$$

$$-2 \leq v_n \leq 2 \rightarrow v(-2) - 2 \leq v_{n-2} \leq v(2) - 2 \rightarrow -2-2 \leq v_{n-2} \leq 2-2$$

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

$$\Rightarrow D_s[-4, 0]$$

(2)

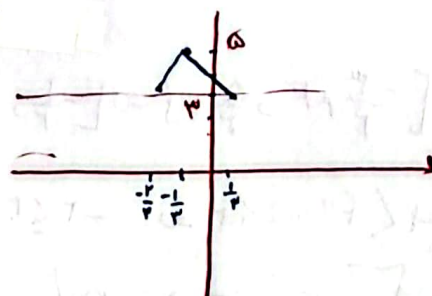
$$-1 \leq n < 2 \Rightarrow \frac{-n+1}{2} \leq \frac{v_{n+1}}{2} < \frac{v_{n+1}}{2} \Rightarrow -1 \leq \frac{v_{n+1}}{2} < 2$$

$$-1 \leq v_{n+1} < 4 \Rightarrow -2 \leq -v_n < 2 \Rightarrow \frac{v}{2} \geq n > -\frac{v}{2} \quad D_s[-\frac{v}{2}, \frac{v}{2}]$$

(3)

$$\begin{cases} -1 \leq v_{n+1} \Rightarrow -2 \leq v_n \Rightarrow -\frac{v}{2} \leq n \\ 2 \leq v_{n+1} \Rightarrow 1 \leq v_n \Rightarrow n \leq \frac{1}{2} \\ 0 \leq v_{n+1} \Rightarrow -\frac{1}{2} \leq n \end{cases}$$

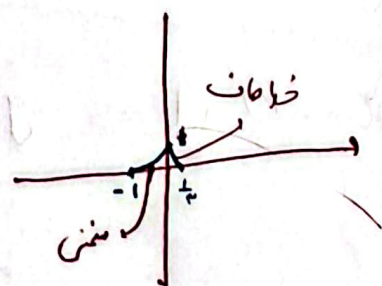
$$\begin{cases} v(0) + v \leq v \\ v(1) + v \leq v \end{cases}$$



(4)

$$\begin{cases} v_{n+1} \leq 1 \Rightarrow \frac{1}{2} \geq n \\ v_{n+1} \leq 2 \Rightarrow n \leq -1 \\ v_{n+1} \leq 2 \Rightarrow n \leq 0 \end{cases}$$

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



(5)

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

$$\Rightarrow (n-1) \leq \sqrt{a} \Rightarrow \begin{cases} n \leq \sqrt{a} + 1 \\ n \leq \sqrt{a} + 1 \end{cases}$$

(6)

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

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

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

(V)

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

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

$\Rightarrow$

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

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

$$\left. \begin{aligned} b-1 \leq \omega &\Rightarrow b \leq y \\ a+r \leq r &\Rightarrow a \leq -r \end{aligned} \right\} a-b \leq -r-y \leq \boxed{-9}$$

(1)

(9)

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

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

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

(10)

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

$$n+1 < 0 \Rightarrow n < -1$$

$$\Rightarrow n+1 + \frac{n-1}{r_{n-1}} < 0 \Rightarrow \frac{(n+1)(r_{n-1}-1) + (n-1)}{r_{n-1}} < 0$$

$$\Rightarrow \frac{r_{n-1}^2 - 1}{r_{n-1}} < 0$$

$$\frac{-\sqrt{r} \sqrt{r}}{r+1} \Rightarrow (-\infty, -\sqrt{r})$$