

$$-2 \leq \frac{3n+2}{0} \leq 2 \rightarrow -1 \leq 3n+2 \leq 1 \rightarrow -12 \leq 3n \leq 11$$

$$\rightarrow -4 \leq n \leq 4 \checkmark$$

(۲)
۱

$$-2 \leq n \leq 3 \rightarrow -4 \leq 3n \leq 9 \rightarrow -8 \leq 3n-2 \leq 7$$

$$D_{f(n)} = [-8, 7] \checkmark$$

(۲)
۲

$$-1 \leq n < 3 \rightarrow -3 \leq 3n < 9 \rightarrow -2 \leq 3n+1 < 10 \rightarrow -1 \leq \frac{3n+1}{2} < 5$$

$$D_{f(n)} = [-1, 5]$$

$$-1 \leq 2-0n < 0 \rightarrow -3 \leq -0n < 3$$

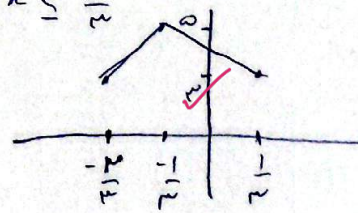
$$\frac{3}{0} \geq n \geq \frac{3}{0} \checkmark$$

(۲)
۳

$$-1 \leq 3n+1 \leq 2 \rightarrow -2 \leq 3n \leq 1 \rightarrow -\frac{2}{3} \leq n \leq \frac{1}{3}$$

$$3n+1=0 \rightarrow n = -\frac{1}{3}$$

$$0 \leq f(n) \leq 1 \quad 0 \leq \frac{1}{3} \leq 2 \rightarrow 3 \leq \frac{1}{3} + 3 \leq 10$$

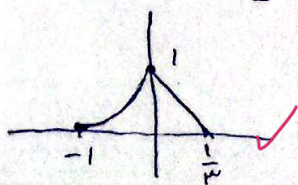


(۲)
۴

$$1 \leq 2-3n \leq 10 \rightarrow -1 \leq -3n \leq 9 \rightarrow +\frac{1}{3} \geq n \geq -1$$

$$2-3n=2 \rightarrow n=0$$

$$0 \leq f(2-3n) \leq 2 \rightarrow 0 \leq \frac{1}{3} f(2-3n) \leq 1$$



(۲)
۵

$$-\frac{b}{ra} = -\frac{\frac{r}{\omega}}{r(1-\frac{1}{r})} = -\frac{r}{\omega} \quad 2 = -\frac{1}{r}\left(\frac{r}{\omega}\right)^r + \frac{r}{\omega}\left(\frac{r}{\omega}\right) + 1 = \frac{rA}{r\omega}$$

(2)

$$r - \frac{r}{\omega} = \frac{rV}{\omega} \text{ انتقاد} \quad r - \frac{rA}{r\omega} = \frac{rV}{r\omega} \text{ انتقاد} \quad f\left(n - \frac{rV}{\omega}\right) + r\frac{rV}{r\omega} = 2\cos$$

6

$$g(n) = -\frac{1}{r}\left(n - \frac{rV}{\omega}\right)^r + \frac{r}{\omega}\left(n - \frac{rV}{\omega}\right) + 1 + \frac{rV}{r\omega} = g(n) = -\frac{1}{r}\left(n - r\right)^r + r$$

$$0 = -\frac{1}{r}\left(n - r\right)^r + r \rightarrow \left(n - r\right)^r = 9 \rightarrow n = r + \sqrt[r]{9} \quad r = 1 \Rightarrow 9$$

$$r\alpha + r = 1 \rightarrow r\alpha = -1 \rightarrow \alpha = -\frac{1}{r} = d$$

(2)

$$1 - r(f) = 1 - 1 = -r \checkmark \beta$$

7

$$2\beta = -\frac{1}{r}\alpha - r = -\frac{r}{r} \checkmark$$

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

(2)

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

8

$$[a+1, \omega] \cap [-r, b-1) = (-r, \omega)$$

$$a+1 = -r \rightarrow a = -r \checkmark \quad b-1 = \omega \rightarrow b = \omega + 1 \checkmark \quad a-b = -r - \omega = -9$$

$$-1 \leq f(n) \leq r \rightarrow -r \leq r f(n) \leq r \rightarrow -\omega \leq r f(n) - r \leq +1$$

(2)

$$0 \leq |r f(n) - r| \leq \omega \rightarrow 0 \leq \sqrt{|r f(n) - r|} \leq \sqrt{\omega} \quad R = [-\sqrt{\omega}, \sqrt{\omega}]$$

9

$$-r \leq n \leq \omega \rightarrow -\frac{r}{r} \leq \frac{n}{r} \leq \frac{\omega}{r} \rightarrow -\frac{1}{r} \leq \frac{n}{r} + 1 \leq \frac{\omega}{r} \rightarrow D = \left[-\frac{1}{r}, \frac{\omega}{r}\right]$$

$$2(n) = \left| \frac{(n-r)+1}{r(n-r)+1} \right| + 1 = \left| \frac{n-1}{r(n-r)} \right| + 1 \quad n + 2(n) < 0$$

(2)

$$n + 1 + \left| \frac{n-1}{r(n-r)} \right| < 0 \quad n < -1 \rightarrow n+1 + \frac{n-1}{r(n-r)} < 0 \rightarrow \frac{r n^2 - n - r + n-1}{r(n-r)} > 0$$

$$\frac{r n^2 - r}{r(n-r)} > 0 \quad n^2 > r$$

نکته: $n < -1$ و $n > \sqrt{r}$

مفید است $(-\infty, \sqrt{r})$

10