

$$-1 \leq \frac{r_{n+1}}{\omega} \leq 1 \xrightarrow{\gamma_0} -1 \leq \frac{r_{n+1} + \gamma}{\gamma_0} \leq 1 \xrightarrow{\gamma_0} -1 \leq \frac{r_{n+1}}{\gamma_0} \leq 1$$

(1)

$$[-1, 1] \text{ extends } [-1, 1]$$

$$-1 \leq n \leq 1 \rightarrow -1 \leq \frac{r_{n+1} - \gamma}{\gamma} \leq 1 \Rightarrow D_{f(n)} = [-1, 1]$$

(2)

$$-1 \leq n \leq 1 \rightarrow -1 \leq \frac{r_{n+1}}{\gamma} \leq 1 \leftarrow D_{f(n)}$$

(3)

$$D_f(r, \omega) \Rightarrow -1 \leq r, \omega n \leq 1 \rightarrow -1 \leq -\omega n \leq 1 \rightarrow -\frac{1}{\omega} \leq n \leq \frac{1}{\omega}$$

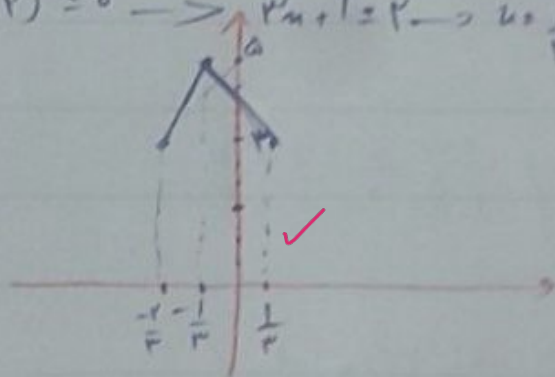
$$\Rightarrow \text{extends } \left[-\frac{1}{\omega}, \frac{1}{\omega}\right]$$

(4)

$$f(0) = 1 \rightarrow r_{n+1} = 0 \rightarrow n = \frac{1}{\gamma}, \gamma = \omega$$

$$f(-1) = 0 \rightarrow r_{n+1} = -1 \rightarrow n = -\frac{1}{\gamma}, \gamma = \gamma$$

$$f(1) = 0 \rightarrow r_{n+1} = 1 \rightarrow n = \frac{1}{\gamma}, \gamma = \gamma$$

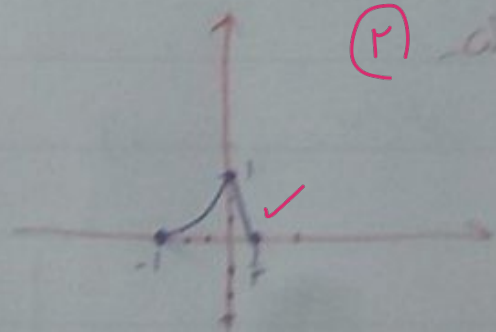


$$f(1) = 0 \rightarrow r, r_n = 1 \rightarrow n = \frac{1}{\gamma}, \gamma = 0$$

$$f(r) = 1 \rightarrow r, r_n = r \rightarrow n = 0, \gamma = 1$$

$$f(\omega) = 0 \rightarrow r, r_n = \omega \rightarrow n = -1, \gamma = 0$$

(5)



$$y = -\frac{1}{r} n^r + \frac{r}{\omega} n + 1 \quad u = \frac{-\frac{r}{\omega}}{-\frac{r}{n^r}} = \left(\frac{r}{\omega} \right) \quad y = \frac{rA}{r\omega}$$

(2)

$$y' = -\frac{1}{r} (n-r)^{r-1} + r \xrightarrow{y'=0} 0 = -\frac{1}{r} (n-r)^{r-1} + r \Rightarrow \frac{1}{r} (n-r)^{r-1} = r \rightarrow \frac{n-r}{n} = \frac{r}{r+1} \rightarrow n = \frac{r}{r+1} \cdot (r+1) = r+1$$

$$\text{Ext}(f) \rightarrow 1/r \quad y = 1 - r f(rn+r) \rightarrow rn+r \leq 1 \rightarrow n \leq \frac{1-r}{r} = \alpha - V$$

$$\rightarrow n = \frac{1}{r} \rightarrow y = 1 - r f(1) = 1 - r f \quad \checkmark$$

(2)

$$\alpha \beta = \left(\frac{r}{r} \right) \checkmark$$

$$f \rightarrow a \leq n-1 \leq r \Rightarrow a+1 \leq n \leq \omega \quad I \quad \frac{1}{r} > (-r, a) \quad \checkmark$$

$$g \rightarrow -1 \leq n+1 \leq b \Rightarrow -r \leq n \leq b-1 \quad II$$

(2)

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

$$y_r = \sqrt{\frac{|r f(n+r)|}{\omega}} \quad D_{y_r} = D_{y_r} \quad y_1 = f\left(\frac{n}{r}+1\right)$$

(2)

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

$$D_{y_r} = [-1, r] \quad -1 \leq f(n) \leq r \rightarrow -\omega \leq r f(n) - r \leq 1$$

$$\xrightarrow{\text{glukto}} [0, \omega] \xrightarrow{\text{no}} D_{y_r} = [0, \omega] \quad \checkmark$$

$$g(u) = \left| \frac{(u-r)+1}{r(u-r)+1} \right| + 1 = \left| \frac{u-1}{ru-r} \right| + 1$$

(2)

$$ru + \left| \frac{u-1}{ru-r} \right| + 1 < 0 \rightarrow 1 < u < \frac{r}{r-1}$$

$$u + \frac{u}{-ru+r} + 1 < 0 \quad u \geq \frac{r}{r-1} \rightarrow \frac{ru^2 - u}{ru-r} < 0 \quad \frac{-\sqrt{r}}{-1} + 1 - \frac{\sqrt{r}}{-1} = \frac{r}{r-1}$$

$$u < 1 \rightarrow \frac{ru^2 - u}{ru-r} < 0$$

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