

$$-2 \leq \frac{m+1}{\omega} \leq 2 \Rightarrow -10 \leq m+1 \leq 10 \Rightarrow -12 \leq m \leq 11 \Rightarrow \boxed{-4 \leq n \leq 6}$$

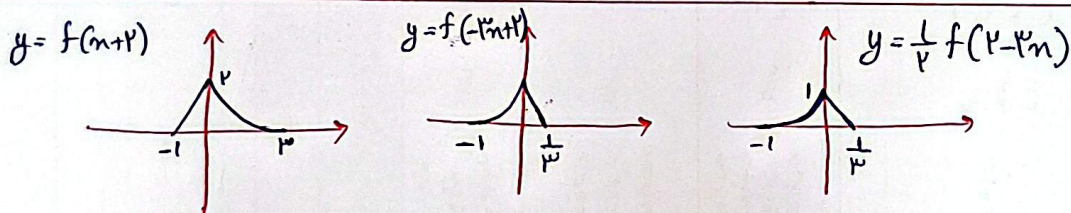
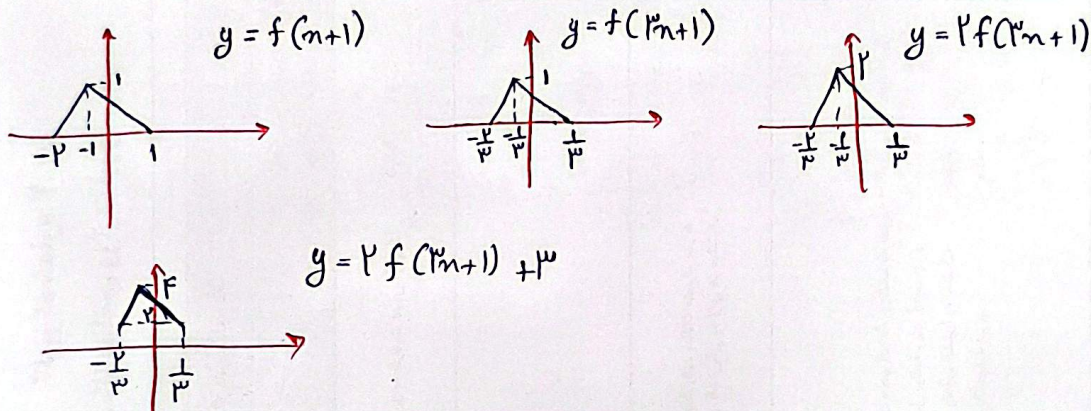
$$D = [-4, 6]$$

$$-2 \leq x \leq 2 \Rightarrow -9 \leq m \leq 9 \Rightarrow -11 \leq m+1 \leq 11 \Rightarrow \boxed{D = [-11, 11]}$$

$$-1 \leq x \leq 3 \Rightarrow -3 \leq mx \leq 9 \Rightarrow -2 \leq m+1 \leq 10 \Rightarrow -1 \leq \frac{m+1}{p} \leq 5$$

$$D_f = [-1, 5] \rightarrow -1 \leq 2-\omega n \leq 5 \Rightarrow -3 \leq -\omega n \leq 3 \Rightarrow -\frac{3}{\omega} \leq n \leq \frac{3}{\omega}$$

$$\boxed{D = \left(-\frac{3}{\omega}, \frac{3}{\omega}\right]}$$



$$x_{s1} = -\frac{b}{pa} = \frac{p}{\omega}$$

$$y_{s1} = \frac{p1}{p\omega}$$

$$y_p = a(n-b)^r + c$$

$$b = 1$$

$$c = 3$$

$$\Rightarrow a = -\frac{1}{p}$$

$$y_p = 0 \Rightarrow -\frac{1}{p}(n-1)^r + 3 = 0 \Rightarrow 9 = (n-1)^r \Rightarrow \begin{cases} n=1 \\ n=7 \end{cases}$$

$$f(n) = a(n-1)^r + 1 \xrightarrow{(1,0)} f(n) = -(n-1)^r + 1$$

$$y = 1 - 2(-(m+1)^r + 1) \Rightarrow x_s = -\frac{1}{p}, y_s = -1 \Rightarrow \boxed{\alpha\beta = \frac{1}{p}}$$

$$D_{f(n-1)} = (a+1, \Delta] \quad D_{g(n+1)} = [-P, b-1]$$

-1

$$D_{f(n-1)} \cap D_{g(n+1)} = (-P, \Delta) \quad \left\{ \begin{array}{l} a+1 = -P \Rightarrow a = -P-1 \\ b-1 = \Delta \Rightarrow b = \Delta+1 \end{array} \right\} \quad a-b = -9$$

$$-P \leq n \leq \Delta \Rightarrow -\frac{P}{P} \leq \frac{n}{P} \leq \frac{\Delta}{P} \Rightarrow -\frac{1}{P} \leq \frac{n}{P} + 1 \leq \frac{\Delta}{P} + 1 \Rightarrow P_{y_P} = \left[-\frac{1}{P}, \frac{\Delta}{P} + 1\right]$$

-9

$$-1 \leq f(n) \leq P \Rightarrow -P \leq P f(n) \leq P^2 \Rightarrow -\Delta \leq P f(n) - P \leq 1 \Rightarrow 0 \leq |P f(n) - P| \leq \Delta$$

$$0 \leq \sqrt{|P f(n) - P|} \leq \sqrt{\Delta} \rightarrow R_{y_P} = [0, \sqrt{\Delta}]$$

$$f(n) = \left| \frac{n+1}{Pn+1} \right| \xrightarrow{\text{add } P \text{ to } P} \left| \frac{n-P+1}{P(n-P)+1} \right| = \left| \frac{n-1}{Pn-P} \right| \xrightarrow{\text{add } P \text{ to } P} \left| \frac{n-1}{Pn-P} \right| + 1$$

-10

$$n+1 + \left| \frac{n-1}{Pn-P} \right| < 0 \quad \begin{cases} n+1 + \frac{n-1}{Pn-P} & n > \frac{P}{P} \leq n < 1 \\ n+1 - \frac{n-1}{Pn-P} & 1 \leq n < \frac{P}{P} \end{cases}$$

$$\begin{cases} \frac{Pn^2 - Pn + Pn - P + n - 1}{Pn - P} = \frac{Pn^2 - P}{Pn - P} < 0 \Rightarrow \frac{-P + \sqrt{P}}{-1 + \frac{1}{P}} + \frac{1/\Delta}{-1 + \frac{1}{P}} \\ \frac{Pn^2 - Pn + Pn - P - n + 1}{Pn - P} = \frac{Pn^2 - Pn - P}{Pn - P} < 0 \Rightarrow \frac{1 - \sqrt{\Delta}}{-1 + \frac{1}{P}} + \frac{1 + \sqrt{\Delta}}{-1 + \frac{1}{P}} \end{cases} \quad \begin{matrix} (-\infty, -\sqrt{P}) \\ X \end{matrix}$$

$$Pn^2 - Pn - P \quad \Delta = P + 1 \pm P_0$$

$$\frac{P \pm \sqrt{P_0}}{P} \quad \frac{1 \pm \sqrt{\Delta}}{P}$$