

$$-2 \leq \frac{r_n + 1}{\delta} \leq 2 \Rightarrow -10 \leq r_n + 1 \leq 10 \Rightarrow -11 \leq r_n \leq 9 \Rightarrow -2 \leq n \leq 4$$

$$D_f = [-2, 4] \quad -2 \leq n \leq 4 \Rightarrow -1 \leq r_n \leq 9 \Rightarrow -1 \leq r_n - 1 \leq 7 \quad (2)$$

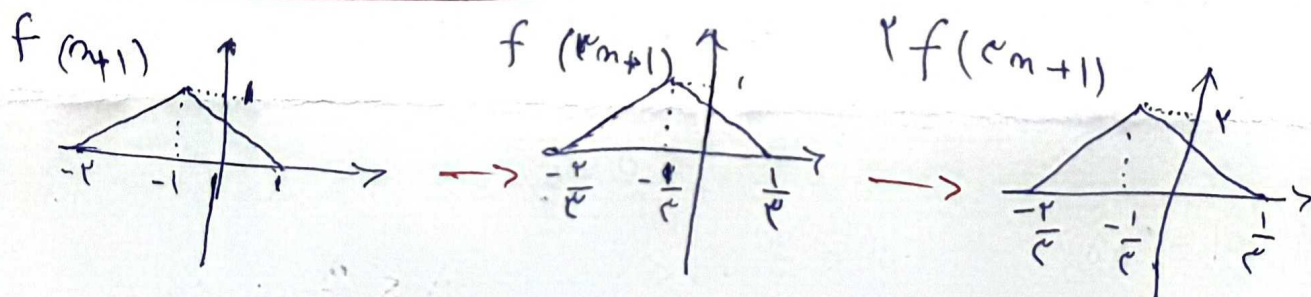
$$D_f = [-1, 7]$$

$$D = [-1, 4] \Rightarrow -1 \leq n \leq 4 \Rightarrow -2 \leq r_n \leq 9 \Rightarrow -2 \leq r_n + 1 \leq 10 \quad (3)$$

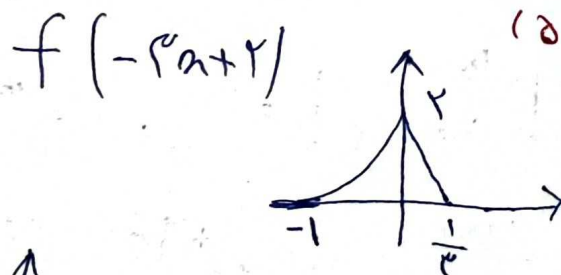
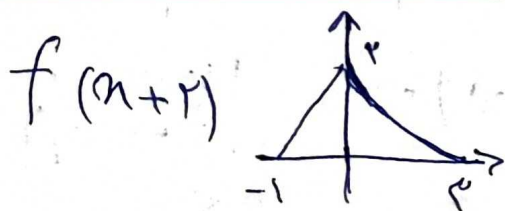
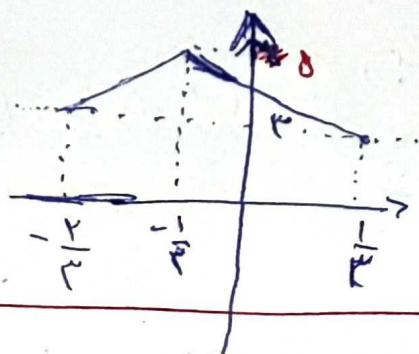
$$\rightarrow -1 \leq \frac{r_n + 1}{2} < \delta \Rightarrow D_{f(n)} = [-1, \delta) \rightarrow$$

$$-1 \leq r_n - \delta < \delta \Rightarrow -2 \leq -\delta < 2 \Rightarrow 2 \geq \delta > -2 \Rightarrow \frac{2}{\delta} \geq n > -\frac{2}{\delta}$$

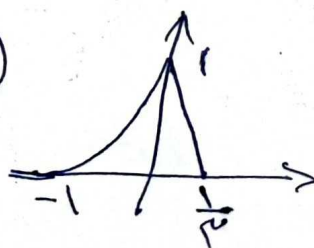
$$D_f(r_n - \delta) = \left(-\frac{2}{\delta}, \frac{2}{\delta}\right]$$



$$2f(r_{n+1}) + 1$$



$$\frac{1}{r} f(r - r_n)$$



(۶) ضرب a^2 تغییر نمی کند، بنابراین معادله سه‌جمله‌ای به صورت زیر است.

$$y = -\frac{1}{2}(x-3)^2 + 4 \xrightarrow[\text{مقدارها}]{\text{برقرار دبا}} 0 = -\frac{1}{2}(x-3)^2 + 4 \Rightarrow (x-3)^2 = 8 \Rightarrow x-3 = \pm 2\sqrt{2} \Rightarrow x_1 = 3-2\sqrt{2}, x_2 = 3+2\sqrt{2}$$

$$\begin{aligned} f(x) &= 1 - 2(4) = -7 \Rightarrow A(-\frac{1}{2}, -7) \\ \Rightarrow \alpha\beta &= -\frac{1}{2}x - 7 = \frac{7}{2} \end{aligned} \quad (۷)$$

$$Df = (a, c], Dg = [-1, b), Df+g = \text{در } \mathbb{R} \quad (۸)$$

$$\left. \begin{aligned} a < m-1 \leq c &\rightarrow a+1 \leq m \leq c \\ -1 \leq m+1 < b &\rightarrow -2 \leq m < b-1 \end{aligned} \right\} \Rightarrow D_{f+g} = (-2, d) \Rightarrow$$

$$a+1 = -2 \Rightarrow a = -3, b-1 = d \Rightarrow b = d \Rightarrow a-b = -9$$

$$D_{g_1} = [-2, d] \Rightarrow -2 \leq \frac{n}{2} + 1 \leq d \rightarrow -4 \leq \frac{n}{2} + 1 \leq d \quad (۹)$$

$$\Rightarrow D_{f(m)} = [-4, 4] \xrightarrow[\text{در مطلق}]{\text{دامل}} D_{g_2} = [-4, 4], R_{f(m)} = [-1, 2] \Rightarrow$$

$$-\delta \leq 2f(m) - 3 \leq 1 \rightarrow |2f(m) - 3| \leq \delta$$

$$\Rightarrow R_{g_2} \xrightarrow[\text{در مطلق}]{\text{دامل}} [\frac{1}{2}, \frac{5}{2}]$$

$$g(n) = f(n-2) + 1 \rightarrow \left| \frac{n-1}{2n-2} + 1 \right| < 1$$

$$\left| \frac{n-1}{2n-2} + 1 \right| + 1, g(n) + n < 0, g(n) \geq 0 \Rightarrow n < 0$$

$$g(n) = \frac{n-1}{2n-2} + 1 \rightarrow g(n) = \frac{n-1}{2n-2} \Rightarrow \frac{n-1}{2n-2} + n < 0 \Rightarrow$$

$$2n^2 - 1 > 0 \Rightarrow n^2 - \frac{1}{2} > 0 \Rightarrow n^2 > \frac{1}{2} \Rightarrow n > \frac{1}{\sqrt{2}} \text{ or } n < -\frac{1}{\sqrt{2}}$$