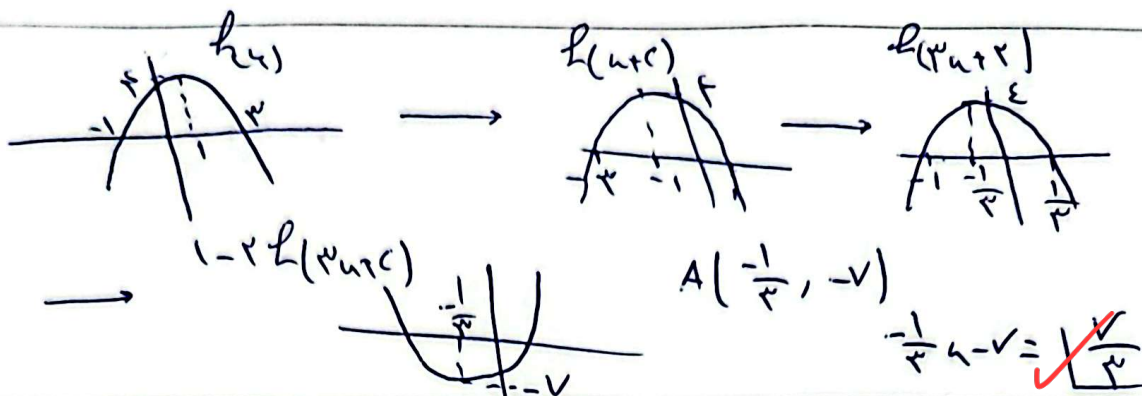


$$y = -\frac{1}{3}(x-4)^2 + 3 \xrightarrow{y=0} -\frac{1}{3}(x-4)^2 = -3 \rightarrow (x-4)^2 = 9 \quad (1)$$

$$\begin{cases} x-4 = 3 \\ x-4 = -3 \end{cases} \rightarrow \begin{cases} x=7 \\ x=1 \end{cases}$$



تبدیل متغیر: $u = x-4$ $\Rightarrow x = u+4$

$$3 - \sqrt{2}u \xrightarrow{\text{تبدیل متغیر}} 3 - \sqrt{2}(u+2) = \sqrt{2}u - 1$$

$$\sqrt{2}u - 1 = \frac{1}{2} \Rightarrow \sqrt{2}u = \frac{3}{2} \Rightarrow u = \frac{3}{2\sqrt{2}} = \frac{3\sqrt{2}}{4}$$

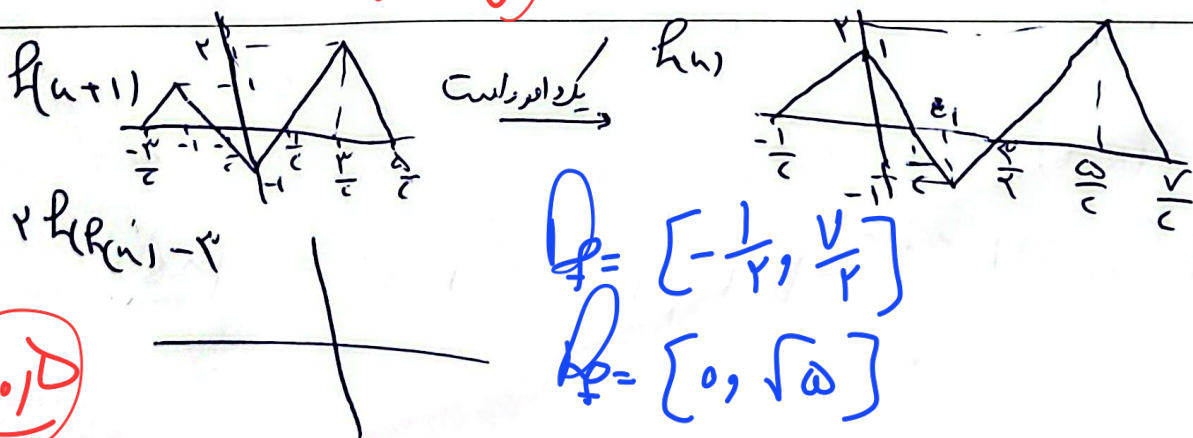
$$\Rightarrow x = 4 + \frac{3\sqrt{2}}{4} \quad (2)$$

$$D_f = (a, 4] \rightarrow D_{f(u+2)} = a < u+2 \leq 4 \Rightarrow a+2 < u \leq 2$$

$$D_g = [-1, b) \rightarrow D_{g(u+1)} = -1 \leq u+1 < b \Rightarrow -2 \leq u < b-1$$

$$D_f \cap D_g = (-2, 2) \Rightarrow a+2 = -2 \Rightarrow a = -4 \quad b-1 = 2 \Rightarrow b = 3$$

$$a-b = -4-3 = -7 \quad (3)$$



$$D_f = \left[-\frac{1}{2}, \frac{3}{2}\right]$$

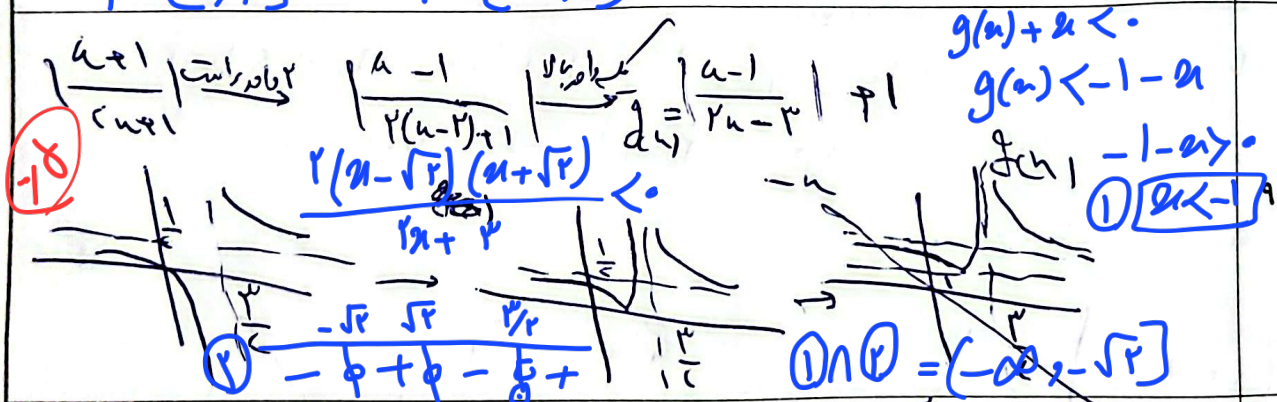
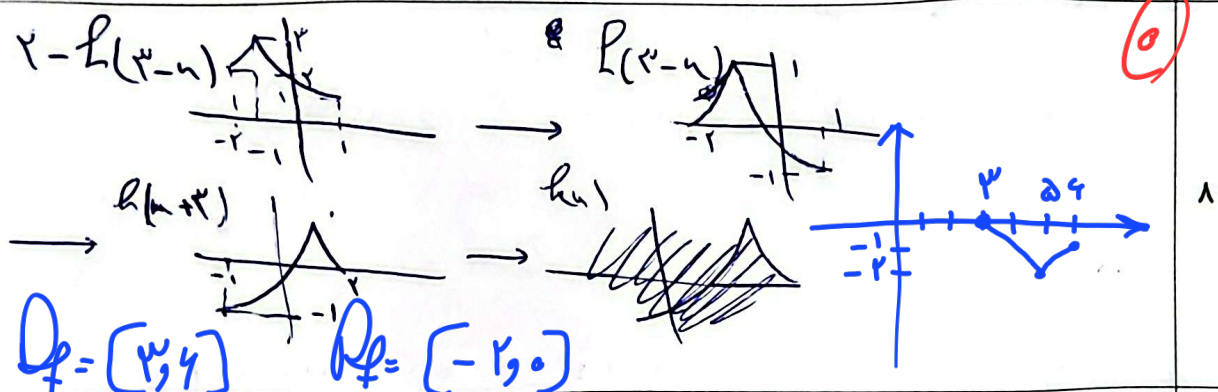
$$D_g = [0, \sqrt{5}]$$

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$$f(-\frac{1}{a}) = \frac{1}{f} \rightarrow -\frac{1}{a^r} [-1] = \frac{1}{f} \rightarrow a^r = f \rightarrow \begin{cases} a = r \times \\ a = -r \checkmark \end{cases}$$

$$b=1 \rightarrow b-a = r$$

$$\begin{aligned} L \cdot g_{\zeta}^{\mu} &\rightarrow L \cdot g_{\zeta}^{\mu \tau \tau} \rightarrow L \cdot g_{\zeta}^{\mu \tau \tau} \rightarrow -L \cdot g_{\zeta}^{\mu \tau \tau} + \tau \rightarrow -L \cdot g_{\zeta}^{\mu \tau \tau} + \tau \\ g(-1\epsilon) &= -\cancel{L \cdot g_{\zeta}^{\mu \tau \tau}} + \tau = -1 \\ g(-1\tau) &= -\cancel{L \cdot g_{\zeta}^{\mu \tau \tau}} + \tau = -\tau \end{aligned}$$



$$h_u = (1-c)^u + v \quad r_1 h_u - h_u^r \geq 0 \rightarrow h_u^r - r_1 h_u \leq 0$$

$$\textcircled{1} h_u \leq h_u - r_1 \leq -\frac{1}{1+r} \quad h_u \leq 0 \Rightarrow \underline{u \leq 0}$$

$$D = u \leq 0 \quad x \in [0, \frac{1}{\mu}] \rightarrow \text{max } u \text{ is } 1$$