

$$D_{f(m)} = [-1, 1] \quad -1 \leq \frac{m+1}{\omega} \leq 1 \rightarrow -\omega \leq m+1 \leq \omega$$

$$f\left(\frac{m+1}{\omega}\right) \rightarrow -12 \leq m \leq 11 \rightarrow -1 \leq m \leq 4$$

$$\rightarrow D = [-1, 4]$$

$$D_{f(m-1)} = [-1, 3] \quad -1 \leq m-1 \leq 3 \rightarrow 0 \leq m \leq \omega$$

$$\rightarrow 0 \leq m \leq \omega$$

$$f(m-1) \begin{cases} m=-1 \rightarrow 3(-1)-1 = -4 \\ m=3 \rightarrow 3(3)-1 = 8 \end{cases} \rightarrow D_f = [-4, 8]$$

$f(m-1)$ دامنه $\leftarrow$

$$f\left(\frac{m+1}{\omega}\right) \quad D = [-1, 3] \quad \begin{cases} m=-1 \rightarrow \frac{-1+1}{\omega} = 0 \\ m=3 \rightarrow \frac{3+1}{\omega} = \frac{4}{\omega} \end{cases} \rightarrow D_f = [0, \frac{4}{\omega}]$$

جواب بیشتره

$$-1 \leq 1 - \omega m \leq \omega \rightarrow -\omega \leq 1 - \omega m \leq \omega$$

$$\rightarrow \frac{\omega}{\omega} > m \geq -\frac{\omega}{\omega} \rightarrow D_{f(1-\omega m)} = \left(-\frac{\omega}{\omega}, \frac{\omega}{\omega}\right)$$

$$f(m) \rightarrow D_f = [-1, 1], R_f = [0, 1]$$

$$g = \frac{1}{\omega} f(m+1) + \frac{1}{\omega}$$

$$D = \left[-\frac{1}{\omega}, \frac{1}{\omega}\right], R = \left[\frac{1}{\omega}, \frac{2}{\omega}\right]$$

$$R \rightarrow 0 \leq f(m) \leq 1 \rightarrow \frac{1}{\omega} \leq \frac{m+1}{\omega} \leq \frac{2}{\omega}$$

The first graph shows a triangle with vertices at (-1, 0), (0, 1), and (1, 0). The second graph shows a triangle with vertices at (-1/ω, 1/ω), (0, 2/ω), and (1/ω, 1/ω).

$$D_f = [1, \omega] \quad g(m) = \frac{1}{\omega} f(1 - \omega m)$$

$$R_f = [0, 1] \quad 1 \leq 1 - \omega m \leq \omega \Rightarrow -1 \leq -\omega m \leq \omega - 1 \Rightarrow -1 \leq m \leq \frac{\omega-1}{\omega}$$

$$D_g = \left[-1, \frac{\omega-1}{\omega}\right], R_g = [0, 1]$$

The graph shows a triangle with vertices at (-1, 0), (0, 1), and ((ω-1)/ω, 0).

$$y = -\frac{1}{\mu}x^{\mu} + \frac{\mu}{\omega}x + 1 \quad y_s = -\frac{1}{\mu}\left(\frac{\mu}{\omega}\right)^{\mu} + \frac{\mu}{\omega}\left(\frac{\mu}{\omega}\right) + 1 = \frac{\mu}{\omega}, \quad x_s = \frac{\mu}{\omega}$$

$$\left(\frac{\mu}{\omega}, \frac{\mu}{\omega}\right) \quad \left(f - \frac{\mu}{\omega}, \mu - \frac{\mu}{\omega}\right) = \left(\frac{1}{\omega}, \frac{\mu}{\omega}\right)$$

$$y = -\frac{1}{\mu}\left(x - \frac{1}{\omega} - \frac{\mu}{\omega}\right) + \mu = -\frac{1}{\mu}(x - f)^{\mu} + \mu \Rightarrow -\frac{1}{\mu}(x - f)^{\mu} + \mu = 0$$

$$(x - f)^{\mu} = \mu \rightarrow x - f = \pm \mu \Rightarrow x = 1, x = \mu \quad \checkmark$$

$$\mu x + 1 = 1 \rightarrow x = -\frac{1}{\mu}$$

$$(1, \mu)$$

$$y = 1 - \mu(f) = 1 - 1 = -\mu$$

$$A(x, B) = \left(-\frac{1}{\mu}, -\mu\right) \Rightarrow B = \left(-\frac{1}{\mu}\right)(-\mu) = \frac{\mu}{\mu} = 1 \quad \checkmark$$

$$D_f = (a, f] \rightarrow a < x - 1 \leq f \rightarrow a + 1 < x \leq \omega \quad \xrightarrow{\omega} (-1, \omega)$$

$$D_g = [-1, b) \rightarrow -1 \leq x + 1 < b \rightarrow -1 \leq x < b - 1$$

$$\Rightarrow a + 1 = -1 \rightarrow a = -2, \quad b - 1 = \omega \rightarrow b = \omega + 1$$

$$a - b = -2 - (\omega + 1) = -\omega - 3$$

$$y_1 = f\left(\frac{x}{\mu} + 1\right) \quad D = [-1, \omega], \quad R = [-1, \mu] \quad -\mu \leq \frac{x}{\mu} + 1 \leq \omega$$

$$\rightarrow -f \leq \frac{x}{\mu} \leq f \rightarrow -1 \leq x \leq 1 \rightarrow D_f = [-1, 1]$$

$$y_2 = \sqrt{\mu f(x) - \mu} \rightarrow -1 \leq y \leq 1 \rightarrow -\mu \leq \mu y - \mu \leq \mu \rightarrow 0 \leq |\mu y - \mu| \leq \mu$$

$$0 \leq \sqrt{|\mu y - \mu|} \leq \omega \rightarrow R = [0, \sqrt{\omega}]$$

$$f(x) = \left|\frac{x+1}{\mu x+1}\right| \rightarrow g(x) = \left|\frac{(x-1)+1}{\mu(x-1)+1}\right| + 1 = \left|\frac{x-1}{\mu x - \mu}\right| + 1$$

$$x + g(x) < 0 \rightarrow x + 1 + \left|\frac{x-1}{\mu x - \mu}\right| < 0 \quad x + 1 < 0 \rightarrow x < -1$$

$$\rightarrow x + 1 + \frac{x-1}{\mu x - \mu} < 0 \rightarrow \frac{\mu x^2 - \mu}{\mu x - \mu} < 0 \rightarrow \mu x^2 - \mu < 0 \rightarrow x^2 < 1 \rightarrow x < -1, x > 1$$

$$D_{y_1} = [-r, \Delta] \rightarrow -r \leq x \leq \Delta \rightarrow -\frac{1}{r} \leq \frac{x}{r} + 1 \leq \frac{\Delta}{r} \Rightarrow D_f = \left[-\frac{1}{r}, \frac{\Delta}{r}\right]$$

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$$R_{y_1} = [-1, r] \rightarrow -1 \leq t \leq r \rightarrow -\Delta \leq rt - r \leq 1 \rightarrow 0 \leq |rt - r| \leq \Delta$$

$$0 \leq \sqrt{|rt - r|} \leq \sqrt{\Delta} \Rightarrow R_f = [0, \sqrt{\Delta}]$$