

مرسایجاتی / تکلیف سازه‌ای ۷

①

$$y = -\frac{1}{\omega} x^2 + \frac{2}{\omega} x + 1$$

$$L \rightarrow x = -\frac{b}{2a} = \frac{-\frac{2}{\omega}}{-\frac{2}{\omega}} = \frac{1}{\omega}$$

$$-\frac{1}{\omega} \times \frac{1}{\omega} \times \frac{2}{\omega} + \frac{2}{\omega} \times \frac{2}{\omega} + 1 = \frac{21}{2\omega} = 1 \frac{1}{2\omega}$$

$$\frac{2}{\omega} + \frac{1}{\omega} = 3 \quad 1 \frac{2}{2\omega} + 1 \frac{2}{2\omega} = 3$$

$$y' = -\frac{1}{\omega} \left(x + \frac{1}{\omega} \right) + \frac{2}{\omega} \left(x + \frac{1}{\omega} \right) + 1 + 1 \frac{2}{2\omega}$$

$$2x^2 + \frac{34x}{\omega} + \frac{119}{2\omega}$$

$$y' = -\frac{2x^2}{\omega} + \frac{34x}{1\omega} - \frac{119}{2\omega} + \frac{2x}{\omega} + \frac{34}{2\omega} + 1 + \frac{1}{2\omega}$$

$$y' = -\frac{2x^2}{\omega} + \left(\frac{3}{1\omega} - \frac{34}{1\omega} \right) x - \frac{119}{2\omega} + \frac{10}{2\omega} + \frac{1}{2\omega} + \frac{14}{1\omega}$$

$$y' = -\frac{2x^2}{\omega} + \left(-\frac{31}{1\omega} \right) x + \frac{1}{2\omega} \rightarrow y' = 0$$

$$-\frac{2x^2}{\omega} - \frac{31}{1\omega} x + \frac{1}{2\omega} = 0 \quad \times \omega \rightarrow -2x^2 - 31x + 1 = 0$$

$$2x^2 + 31x + 1 = 0$$

$$y = 1 - 2f(3x+2)$$

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الکسیر | $\begin{aligned} &\rightarrow 3x+2=1 \rightarrow 3x=-1 \rightarrow x=-\frac{1}{3} \\ &\rightarrow -2 \times 2 = -4 \rightarrow -4+1 = -3 \end{aligned}$

$$AB = -\frac{1}{3}, -3 = \frac{V}{13}$$

$$y = 3 - 4\sqrt{2x}$$

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خواب واد درجه متغی $\rightarrow 3 - \sqrt{2(x+1)}$

نسبت به عدد ها قرینه $\rightarrow -(3 - \sqrt{2(x+1)}) = \sqrt{2(x+1)} - 3$

و واد درجه متغی y ها $\rightarrow \sqrt{2(x+1)} + 2 \quad y = \frac{V}{3}$

$$\frac{V}{3} - 2 = \sqrt{2(x+1)} \Rightarrow \frac{9}{4} = 2(x+1) \rightarrow \frac{9}{8} = x+1 \rightarrow x = \frac{1}{8}$$

$$D_f = (a, 2] \quad D_g = [-1, b)$$

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$$y = f(x-1) + g(x+1) \rightarrow D_y = (-2, \infty)$$

$$D_{f(x-1)} = (a+1, \infty) \quad , \quad D_{g(x+1)} = [-2, b-1)$$

$$[-2, b-1) \cap (a+1, \infty) = (-2, \infty) \quad \begin{cases} \rightarrow b-1 = \infty \rightarrow b = 9 \\ \rightarrow a+1 = -2 \rightarrow a = -3 \end{cases}$$

$$a - b = -3 - 9 = -12$$

$$y_1 = f\left(\frac{x}{2}+1\right) \rightarrow D_f = [-3, \infty) \quad , \quad R_f = [-1, 2]$$

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$$x = -3 \rightarrow -\frac{3}{2} + \frac{1}{2} = -1 \quad x = \infty \rightarrow \frac{\infty}{2} + \frac{1}{2} = \frac{V}{2}$$

$$\Rightarrow D_{f(x)} = \left[-\frac{1}{2}, \frac{V}{2}\right] \quad , \quad R_{f(x)} = [-1, 2]$$

$$y_v = \sqrt{|Y f(x) - \psi|}$$

$$D_{y_v} = \left[-\frac{1}{y_v}, \frac{1}{y_v}\right] \rightarrow R_{y_v} = \left[\sqrt{|(-1 \times Y) - \psi|}, \sqrt{|(1 \times Y) - \psi|}\right] = [1, \sqrt{\omega}]$$

$$f(x) = \log_2 x$$

$$\log_2(x+1) \rightarrow \log_2(x+1)$$

$$\log_2(x+2) \rightarrow -\log_2(x+2)$$

$$\log_2(x+1) \rightarrow -\log_2(x+1)$$

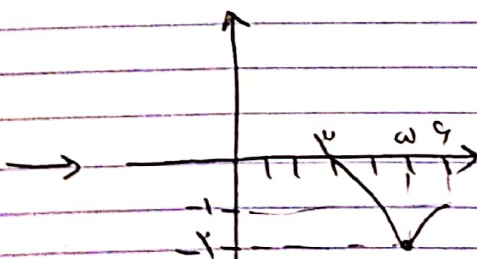
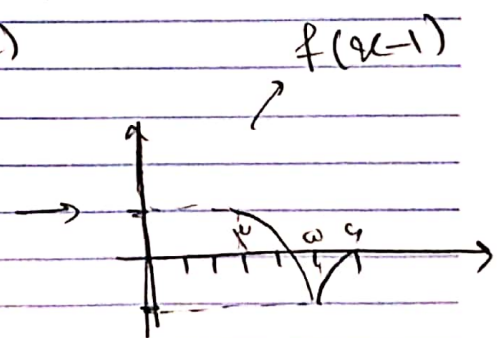
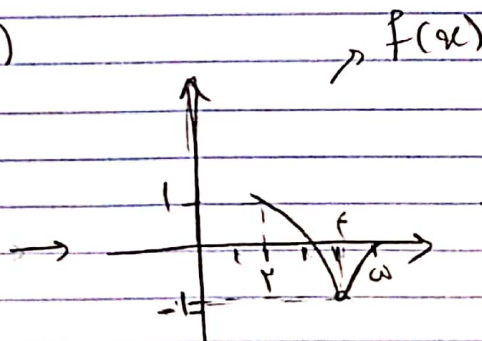
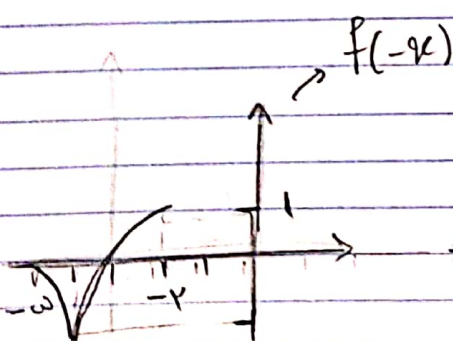
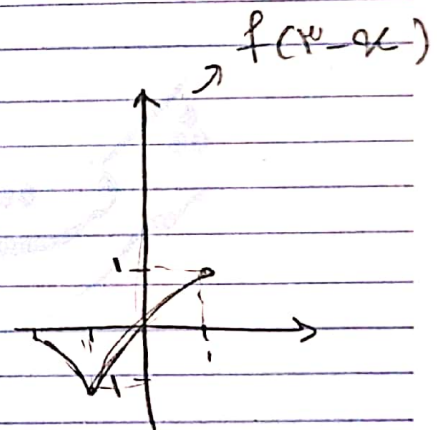
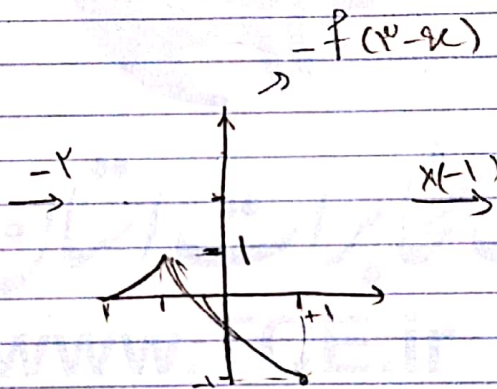
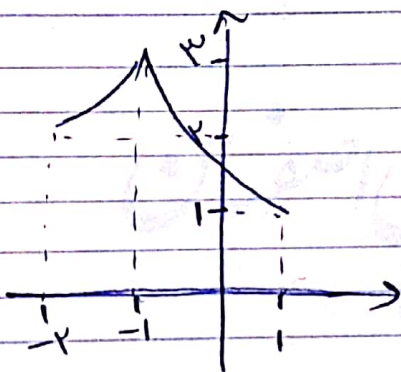
$$-\log_2(x+1) + 1 = g(x)$$

$$g(-14) + g(-62) = -\log_2 14 - \log_2 62 = -f - 9 = -10$$

$$y_1 = 2 - f(3-x)$$

$$y_2 = f(x-1) - 1$$

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به اندک بسنده کنید و تن به خواری ندهید. امام علی (ع)

$$f(x) = \left| \frac{x+1}{2x+1} \right|$$

سپاسگزار است $\rightarrow \left| \frac{x-2+1}{2(x-2)+1} \right| = \left| \frac{x-1}{2x-3} \right|$

بسیار دانا است $\rightarrow \left| \frac{x-1}{2x-3} \right| + 1 = g(x)$

$$x + \left| \frac{x-1}{2x-3} \right| + 1 < 0 \rightarrow \frac{x+1 + \frac{x-1}{2x-3}}{2x-3} < 0$$

$$\frac{x+1 + \frac{x-1}{2x-3}}{2x-3} < 0 \rightarrow \frac{x+1 + \frac{x-1}{2x-3}}{2x-3} < 0 \rightarrow \frac{2x^2 - x - 3 + x - 1}{2x-3} < 0$$

$$\frac{2x^2 - x - 3 - x + 1}{2x-3}$$

$$\frac{2x^2 - 2x - 2}{2x-3} < 0 \rightarrow \frac{-2}{-1} + \frac{-2}{-1} = 2 + 2 = 4$$

$$\frac{2x^2 - 2x - 2}{2x-3} < 0$$

$$g(x) = \sqrt{28 f(x) - f^2(x)}$$

$$y = x^3 \rightarrow y = (x-2)^3 + 27 = f(x)$$

$$-f^2(x) + 28f(x) \geq 0 \xrightarrow{f(x)=t} -t^2 + 28t \geq 0 \rightarrow -t(t-28) \geq 0$$

$$\begin{array}{c} 0 \quad 28 \\ | \quad | \\ - \quad + \quad - \end{array} \rightarrow 0 \leq f(x) \leq 28 \rightarrow 0 \leq (x-2)^3 + 27 \leq 28$$

$$-27 \leq (x-2)^3 \leq 1 \xrightarrow{\sqrt[3]{}} -3 \leq x-2 \leq 1+2 \rightarrow -1 \leq x \leq 3$$

$$D_f = [-1, 3]$$