

مشتاق معلوم - بالفتح - شریح تکلیف لجان

در این تابع $\alpha = -\frac{1}{3}$ رأس سهمی بر نقطه $(4, 3)$

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

$$\alpha = 1, 7 \leftarrow x-4 = \pm 3$$

$f(x)$ رأس $\rightarrow (1, 4)$

$A(\alpha, \beta)$ رأس $\rightarrow y = 1 - 2f(3x+2)$

$$f(x) \xrightarrow{\text{مقلوب و 2}} f(x+2) \xrightarrow{\text{مقلوب و 1/3 برابر}} f(3x+2) \rightarrow \alpha = -\frac{1}{3}$$

$$(1, 4) \quad (-1, 4) \quad (-\frac{1}{3}, 4)$$

$$f(x) \xrightarrow{\text{عکس و 2 برابر}} 2f(x) \xrightarrow{\text{نسبت به محور عمودی}} -2f(x) \xrightarrow{\text{مقلوب و 1}} 1 - 2f(x) \Rightarrow \beta = -\sqrt{}$$

$$(1, 4) \quad (1, 8) \quad (1, -8) \quad (1, -\sqrt{)}$$

$$f(x) = 3 - \sqrt{2x} \rightarrow f_1(x) = 3 - \sqrt{2(x+1)} \rightarrow f_2(x) = - (3 - \sqrt{2(x+1)}) = \sqrt{2(x+1)} - 3$$

$$f_2(x) = \sqrt{2(x+1)} - 3 + \alpha = \sqrt{2(x+1)} + 2$$

$$\sqrt{2x+2} + 2 = \frac{7}{2}$$

$$\sqrt{2x+2} = \frac{3}{2} \rightarrow 2x+2 = \frac{9}{4} \rightarrow 2x = \frac{1}{4} \rightarrow x = \frac{1}{8}$$

$$y = f(x-1) + g(x+1)$$

$$D_f = (a, 4] \quad D_g = [-1, b)$$

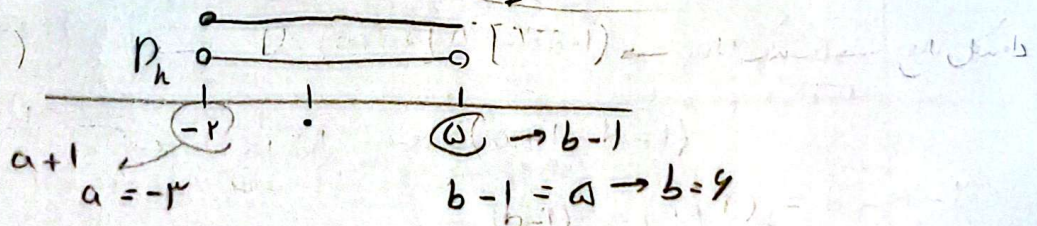
$$f(x-1) \rightarrow x-1 \in (a, 4]$$

$$a < x-1 \leq 4 \rightarrow a+1 < x \leq 5$$

$$g(x+1)$$

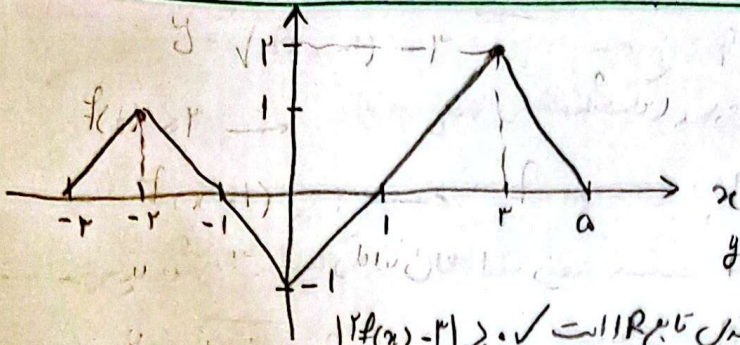
$$x+1 \in [-1, b)$$

$$-1 \leq x+1 < b \rightarrow -2 \leq x < b-1$$



$$\rightarrow a-b = -3-2 = -5$$

موتما محله جفت - پانچ تریجی تکلیف لکھی



$$y_1 = f\left(\frac{x}{r} + 1\right)$$

$$Df = \left[-\frac{1}{r}, \frac{1}{r}\right]$$

$$Rf = [-1, 1]$$

$$y_r = \sqrt{|Rf(x)|} = 1 \quad Dy_r = ? \quad Ry_r = ?$$

عبارت در برد و مداره برقرار است و در فضا گراف تابع R است $\checkmark$ $|f(x) - 1| \geq 0$ چون f همواره R را نمی پذیرد لذا دامنه y همان دامنه f تابع $f(x)$ است یعنی $Dy_r = \left[-\frac{1}{r}, \frac{1}{r}\right]$ $Ry_r = [1, 1]$

$-1 \leq f(x) \leq 1 \rightarrow -2 \leq 2f(x) \leq 2 \rightarrow -5 \leq 2f(x) - 3 \leq 1 \rightarrow 1 \leq |2f(x) - 3| \leq 5 \rightarrow 1 \leq |f(x) - 1| \leq 5 \rightarrow Ry_r = [1, 5]$

$$f(x) = \log_r x \xrightarrow{\text{دامنه } 2} y = \log_r x + 2 \xrightarrow{\text{تغییر متغیر}} y = -\log_r x + 2 \xrightarrow{\text{دامنه } 3} y = -\log_r x + 3$$

$$\xrightarrow{\text{تغییر متغیر}} y = -\log_r^{2-x} + 3 \quad g(x) = -\log_r^{2-x} + 3$$

$$g(-14) + g(-42) = ?$$

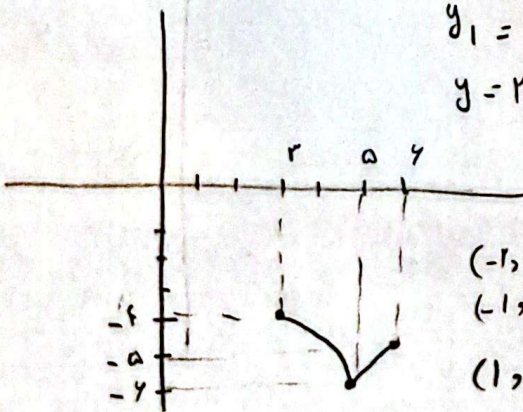
$$\left. \begin{aligned} g(-14) &= -\log_r^{14} + 3 = -4 + 3 = -1 \\ g(-42) &= -\log_r^{42} + 3 = -5 + 3 = -2 \end{aligned} \right\} \Rightarrow -1 + (-2) = -3 \checkmark$$

$$y_1 = 2 - f(3-x) \rightarrow y_r = f(x-1) - 1$$

$$y_1 = 2 - f(3-x) \xrightarrow{\text{تغییر متغیر}} y = 2 - f(x+3) \xrightarrow{\text{دامنه } 4}$$

$$y = 2 - f(x-1) \xrightarrow{\text{تغییر متغیر}} y = f(x-1) - 2 \xrightarrow{\text{دامنه } 3}$$

$$y = f(x-1) - 5$$



$$\begin{aligned} (-2, 2) &\rightarrow (2, 2) \rightarrow (4, 2) \rightarrow (4, -2) \rightarrow (4, -5) \\ (-1, 3) &\rightarrow (1, 3) \rightarrow (3, 3) \rightarrow (3, -3) \rightarrow (3, -6) \\ (1, 1) &\rightarrow (-1, 1) \rightarrow (1, 1) \rightarrow (1, -1) \rightarrow (1, -4) \end{aligned}$$

فرضاً معلوم - بیغ - شری تکلیف ہے

کہ اس کفیتہ رادے تابع طور کیم

$$f(x) = \left| \frac{x+1}{x-1} \right| \xrightarrow{\text{تبدیل}} \left| \frac{x-1+1}{x(x-1)+1} \right| = \left| \frac{x-1}{x^2-x} \right| \xrightarrow{\text{تبدیل}} \left| \frac{x-1}{x^2-x} \right| + 1 = g(x)$$

$$g(x) = x + \left| \frac{x-1}{x^2-x} \right| + 1 < 0 \quad x+1 < 0 \rightarrow x < -1 \xrightarrow{\text{دائیں بازو}} x+1 + \frac{x-1}{x^2-x} < 0$$

$$\rightarrow (x+1)(x^2-x) + (x-1) > 0 \rightarrow (x+1)(x^2-x) = x^3 - x + x^2 - x + 1 = x^3 + x^2 - 2x + 1$$

$$x^3 + x^2 - 2x + 1 = 0 \rightarrow x^3 + x^2 - 2x + 1 = 0 \rightarrow x^2 + x - 2 = 0 \rightarrow x^2 + x - 2 = 0 \rightarrow x^2 + x - 2 = 0$$

$$\text{C } x < -1 \quad \text{D } |x| > \sqrt{2} \quad \text{E } x < -\sqrt{2} \quad \text{F } x > \sqrt{2} \quad \text{G } x < -\sqrt{2}$$

$$a(x-1)^3 + 1 \xrightarrow{(0,0)} a(-1)^3 + 1 = 0 \rightarrow 1a = 1 \rightarrow a = 1 \rightarrow a = \frac{1}{1} \in \mathbb{R}$$

$$\rightarrow f(x) = \frac{1}{x} (x-1)^3 + 1 \quad 1 \wedge f(x) - f^2(x) \geq 0 \rightarrow 0, 1$$

$$\frac{a}{2} + \frac{1}{2} = 1$$

$$f(x) \leq 1 \rightarrow 1 \leq \frac{1}{x} (x-1)^3 + 1 \leq 1$$

$$\left\{ \begin{array}{l} x > 0 \\ x \leq \frac{1}{3} \end{array} \right\} \quad (x-1)^3 \leq \frac{1}{3}$$

$$D_{g(x)} = [0, \frac{1}{3}] \rightarrow 0, 1, 2 \rightarrow \text{مجموع}$$