

$$D_f = [-4, 2] \rightarrow P_f(3x-2) = ? \rightarrow -4 \leq 3x-2 \leq 2$$

دردی تابع f

$$\rightarrow -2 \leq 3x \leq 4 \rightarrow -\frac{2}{3} \leq x \leq \frac{4}{3} \rightarrow P_f(3x-2) \left[-\frac{2}{3}, \frac{4}{3} \right]$$

$$P_f(3x-2) = [-5, -2] \rightarrow D_f = ? \rightarrow -4 \leq 3x-2 \leq -1 \rightarrow 0 \leq 3x \leq 1 \rightarrow P_f \left[-\frac{1}{3}, 0 \right]$$

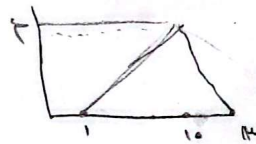
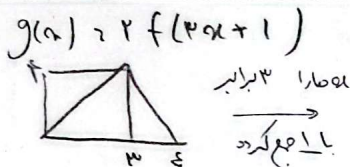
دردی تابع f

$$f(x) = x + \sqrt{x-2} \xrightarrow{x \rightarrow x-2} f = x-2 + \sqrt{x-2}$$

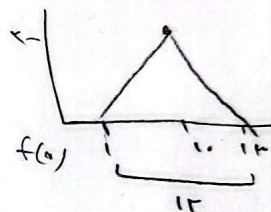
معکوس اوله معکوس اوله

$$x-2 + \sqrt{x-2} \geq x \rightarrow x-2 \geq 2 \rightarrow x \geq 4 \rightarrow x \geq 1 \rightarrow y \geq 1$$

یعنی تابع معکوس کرده حال چون در سوال بزرگتر معکوس تابع را با $x \geq 1$ می خواهد چه f معکوس اوله می دینم معکوس اوله دردی $x \geq 1$ قطع می کنه پس بزرگتر x را به دست آورد



تجانف



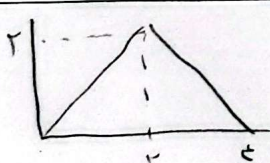
$$\rightarrow S = \frac{2 \times 12}{2} = 12$$

$$2, -3 \rightarrow f \rightarrow f(2/2-3) \text{ بقیه } y = a + 2f\left(\frac{x-a}{2}\right)$$

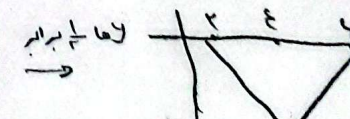
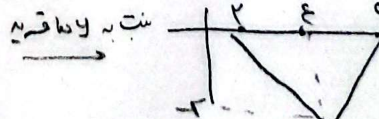
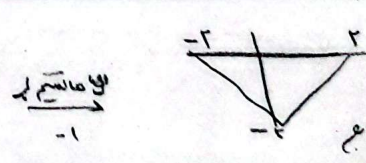
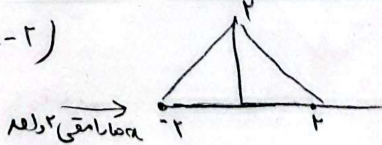
$$\frac{x-a}{2}, 2 \rightarrow x = f+a \text{ و } y = a + 2x - 3 \rightarrow y = a - 6$$

$$\rightarrow a - 6 = 2(f+a) - 3 \rightarrow a = -6$$

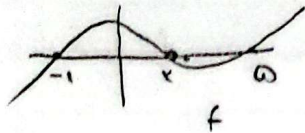
در A'
 $2x-1$



$$y = f(x-2)$$

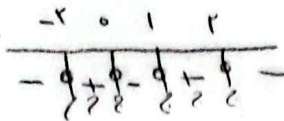


$$\frac{1}{2} f(4-a)$$



$$\sqrt{-(x+2)f(2x-1)} \quad f(x) = \frac{x^2-2x-1}{x+1}$$

$$f(x) = \frac{x^2-2x-1}{x+1} \rightarrow \begin{cases} 2x-1 \geq 0 \rightarrow x \geq \frac{1}{2} \\ 2x-1 \geq 2 \rightarrow x \geq \frac{3}{2} \\ 2x-1 \geq -1 \rightarrow x \geq 0 \end{cases}$$



$$\rightarrow D = [-2, 0] \cup [1, 2]$$

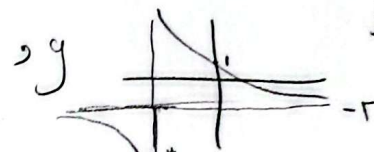
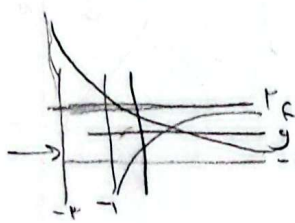
$$f(2x-3)+1 \xrightarrow{\text{تعويض}} |2(x+u)-3|+1 \xrightarrow{\text{تعويض}} |2x+2u-3|+1$$

$$|2x+2u-3|+1 = |2x-3|+1$$

$$|2x+2u-3|+1 = |2x-3|+1 \xrightarrow{\text{باز کردن مطلق}} |2u-3|+1 = |-3|+1$$

$$|2u-3| \geq 4 \rightarrow \begin{cases} 2u-3 \geq 4 \rightarrow u \geq \frac{7}{2} \\ 2u-3 \leq -4 \rightarrow u \leq -\frac{1}{2} \end{cases}$$

$$y = \frac{2x-1}{x+1} \xrightarrow{\text{تبدیل}} y = \frac{1-2x}{x+1} \xrightarrow{\text{تبدیل}} y = \frac{1-2(\frac{1}{x})}{\frac{1}{x}+1} = \frac{x-2}{x+1} = g(x)$$

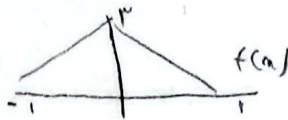


و این دو دامنه باید برابر باشند تا نقطه اشتراک داشته باشند
(معادلات افقی باید برابر باشند)

جواب: $[-2, 0] \cup [1, 2]$

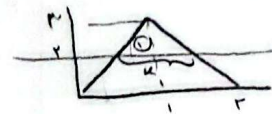
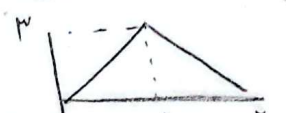
$$y = f\left(\frac{x}{2}\right) + 2$$

مشتق دوم



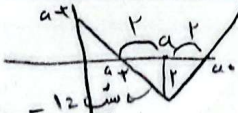
امدادات

مشتق دوم



$$\frac{1}{x} = \frac{1}{x} \rightarrow x \geq \frac{1}{2} \rightarrow S = \left[\frac{1}{2}, \infty \right)$$

$$f(x) = |x-a| - 2$$



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

$$S = \frac{(a-2)^2}{2} + \frac{4 \times 2}{2} = \frac{9}{2} \rightarrow (a-2)^2 = 1 \rightarrow \begin{cases} a-2 \leq 1 \rightarrow a \leq 3 \\ a-2 \geq -1 \rightarrow a \geq 1 \end{cases}$$

$$\begin{cases} |a-1| - 2 \rightarrow f(1) = -2 \\ |a-2| - 2 \rightarrow f\left(\frac{1}{2}\right) = \frac{7}{2} \end{cases}$$