

نام و نام خانوادگی: زهرا سادات حسینی پاشنه: ۱۸, ۵ کلاس: دوازدهم ریاضه A

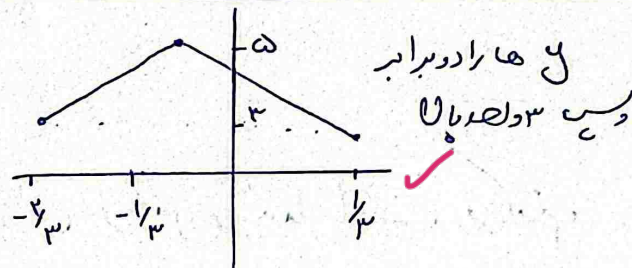
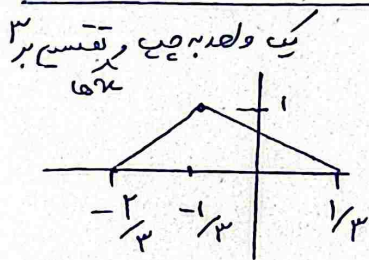
$$f\left(\frac{1}{3}x + \frac{1}{5}\right) \rightarrow -\frac{1}{3} \leq \frac{1}{3}x + \frac{1}{5} \leq \frac{1}{3} \rightarrow -10 \leq x + \frac{2}{5} \leq -\frac{10}{3} \rightarrow -\frac{11}{5} \leq x \leq -\frac{11}{3} \quad (2)$$

$$D = [-\frac{11}{5}, -\frac{11}{3}]$$

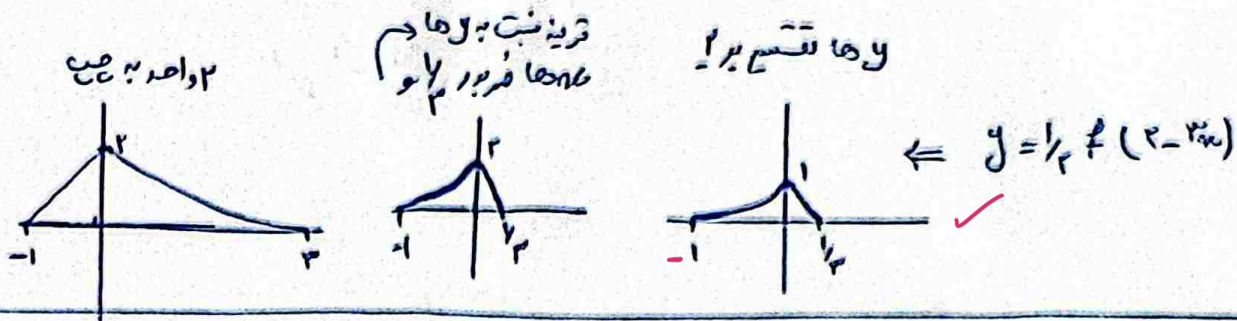
$$x = [-2, 3] \xrightarrow{\text{جایگزینی}} \begin{cases} 3(-2) - 2 = -8 \\ 3(3) - 2 = 7 \end{cases} \Rightarrow D_f = [-8, 7] \quad (2)$$

$$x = [-1, 2] \xrightarrow{\text{جایگزینی}} \begin{cases} \frac{3(-1) + 1}{2} = -1 \\ \frac{3(2) + 1}{2} = 5 \end{cases} \Rightarrow D_{f \circ g} = [-1, 5] \quad (1, 5)$$

$$-1 \leq 2 - 5x \leq 0 \rightarrow -3 \leq -5x \leq 3 \rightarrow -\frac{3}{5} \leq x \leq \frac{3}{5} \quad -\frac{3}{5} \leq x \leq \frac{3}{5}$$



ی ها را در برابر
دایره یکتا و تقسیم بر ۳



۲

رأس نمودار اولی $(\frac{1}{5}, \frac{1}{5}) \rightarrow \begin{cases} -\frac{b}{a} = \frac{-\frac{1}{5}}{-\frac{1}{5}} = \frac{1}{5} \\ y = -\frac{1}{5}(\frac{1}{5})^2 + \frac{1}{5}(\frac{1}{5}) + 1 = \frac{24}{25} \end{cases}$

$a(x_5 - x_5)^2 + y_5$

$-\frac{1}{5}(x-4)^2 + 2 = (x-4)^2 = 9 \rightarrow x-4 = 3 \rightarrow x = 7$
 $\rightarrow x-4 = -3 \rightarrow x = 1$

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رأس نمودار دومی $(1, 4) \rightarrow \frac{x_5 - 2}{3} = \alpha \rightsquigarrow \frac{1-2}{3} = -\frac{1}{3} = \alpha$

$\alpha \beta = (-\frac{1}{3})(-7) = \frac{7}{3}$

$\hookrightarrow (y_5 x(-2)) + 1 = \beta \rightsquigarrow (-2)(4) + 1 = -7 = \beta$

$D_f = (a, 4] \xrightarrow{\text{یک واحد به راست}} (a+1, 5]$
 $D_g = [-1, b) \xrightarrow{\text{یک واحد به چپ}} [-2, b-1)$

$\left. \begin{array}{l} \text{اگر } a = -2 \\ \text{راستش } b = 5 \end{array} \right\} \begin{array}{l} \alpha + 1 = -2 \rightarrow \alpha = -3 \\ b - 1 = 5 \rightarrow b = 6 \end{array}$

۱

$x = [3, 5] \xrightarrow{\text{یک واحد به چپ}} [-\frac{3}{2} + 1, \frac{5}{2} + 1] \rightarrow D_{f \circ g} = [-\frac{1}{2}, \frac{7}{2}] / R_{f \circ g} = [-1, 2]$

$|2f(x) - 3| > 0 \xrightarrow{\text{همواره برقرار است}} R = [-1, 2]$

$\begin{cases} y_r = \sqrt{r(r-1) + 3} = \sqrt{5} \\ y_r = \sqrt{r(r-1) - 3} = 1 \end{cases}$

۱

انتقال $\rightarrow \left| \frac{n-1}{2n-3} \right| < 1 \rightsquigarrow g(n) + n < 0 \rightarrow \left| \frac{n-1}{2n-3} \right| < -n-1$

$n+1 < \frac{n-1}{2n-3} < -n-1$

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

② $\frac{n-1}{2n-3} - n-1 > 0 \rightarrow \frac{n-1 - 2n^2 - 2n + 3n + 3}{2n-3} > 0$

$x = \frac{1 \pm \sqrt{5}}{2}$

① $\frac{-\sqrt{2} \pm \sqrt{2}}{-4 \pm 4 - 8 \pm 8}$

② $\frac{1-\sqrt{5}}{2} \quad \frac{1+\sqrt{5}}{2}$

$\rightarrow (-\infty, -\sqrt{2})$ فقط

صفحه آخر

$$D_{y_1} = [-3, 5] \rightarrow -3 \leq x \leq 5 \rightarrow -\frac{1}{3} \leq \frac{x}{3} + 1 \leq \frac{5}{3} \Rightarrow D_f = \left[-\frac{1}{3}, \frac{5}{3}\right]$$

9.

$$R_{y_1} = [-1, 2] \rightarrow -1 \leq t \leq 2 \rightarrow -5 \leq 2t - 3 \leq 1 \rightarrow 0 \leq |2t - 3| \leq 5$$

$$0 \leq \sqrt{|2t - 3|} \leq \sqrt{5} \Rightarrow R_f = [0, \sqrt{5}]$$

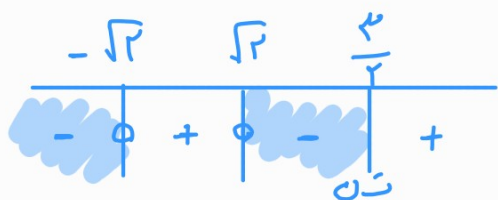
$$g(x) = \left| \frac{(x-2)+1}{2(x-2)+1} \right| + 1 = \left| \frac{x-1}{2x-3} \right| + 1$$

10.

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

از به قدر مطلق بزرگتر شده پس باید مثبت باشد : $-1-x > 0 \rightarrow x < -1$

$$\frac{x < -1}{\text{قدر مطلق مثبت}} \rightarrow \frac{x-1}{2x-3} < -1-x \rightarrow \frac{2x^2-4}{2x-3} < 0 \rightarrow \frac{2(x-\sqrt{2})(x+\sqrt{2})}{2x-3} < 0$$



$$\xrightarrow{x < -1} x < -\sqrt{2} \rightarrow (-\infty, -\sqrt{2})$$