

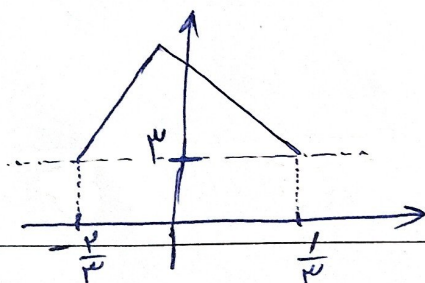
$$-2 \leq \frac{3n+2}{8} \leq 4 \rightarrow -10 \leq 3n+2 \leq 30 \rightarrow -12 \leq 3n \leq 28 \rightarrow -4 \leq n \leq 9 \frac{1}{3}$$

$$f(3n-2) \Rightarrow \begin{cases} n=-2 \Rightarrow 3(-2)-2=-8 \\ n=3 \Rightarrow 3(3)-2=7 \end{cases} \Rightarrow D_f = [-8, 7]$$

$$f\left(\frac{3n+1}{2}\right) \xrightarrow{\text{خطی}} \begin{cases} n=-1 \rightarrow \frac{3(-1)+1}{2} = -1 \\ n=3 \rightarrow \frac{3(3)+1}{2} = 5 \end{cases} \rightarrow D_f = [-1, 5]$$

$$f(2-8n) \Rightarrow 1 \leq 2-8n \leq 8 \Rightarrow -1 \leq -8n \leq 7 \Rightarrow -\frac{3}{8} < n \leq \frac{1}{8} \Rightarrow D_f = \left(-\frac{3}{8}, \frac{1}{8}\right]$$

$$y = f(n+1) \xrightarrow{\text{واحد به سمت چپ}} y = f(3n+1) \xrightarrow{\text{دامنه ها } \frac{1}{3} \text{ برابر}} y = 2f(3n+1) \xrightarrow{y \text{ ها دو برابر}} y = 2f(3n+1) + 3 \xrightarrow{\text{۳ واحد به سمت بالا}}$$

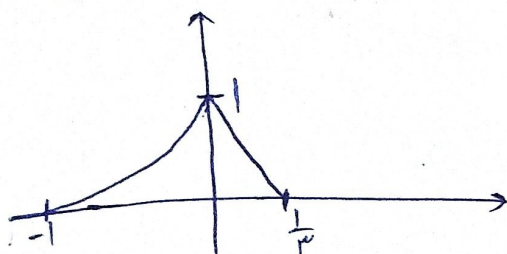


$$D_f = [-1, 2] \xrightarrow{-1} [-2, 1] \xrightarrow{\div 3} \left[-\frac{2}{3}, \frac{1}{3}\right]$$

$$R = [0, 1] \xrightarrow{\times 2} [0, 2] \xrightarrow{+3} [3, 5]$$

① ۲ واحد به سمت چپ ② دامنه $\frac{1}{3}$ برابر و قرینه نسبت به محور y ③ y ها نصف

$$f(n) \rightarrow \frac{1}{3} f\left(\frac{-3n+2}{3}\right) \quad \text{③} \quad \text{②} \quad \text{①}$$



$$D: \left[-1, \frac{1}{3}\right]$$

$$R = [0, 1]$$

$$\text{ext} \begin{cases} -\frac{b}{2a} = \frac{3}{8} \rightarrow \textcircled{4} \\ \frac{21}{28} \rightarrow \textcircled{3} = \left(\frac{\sqrt{5}}{28}\right) \end{cases} \Rightarrow y = -\frac{1}{4}(x-4)^2 + 3 = 0$$

$$(x-4)^2 = 9 \Rightarrow x=1, x=7$$

صورت گفته انتقال پس فقط بالا و پایین و راست و چپ می رود و ضرب ۴ و ۱ تغییر نمی کند.

$$y = 1 - 2f(2x+2) \Rightarrow \begin{cases} x: \rightarrow \text{داده به سمت چپ - دافرها ۱/۲ برابر} \\ y: \rightarrow \text{۲ برابر و سپس برعکس نسبت به محور ها} \end{cases}$$

$$\text{ext } f(x) = (1, 4) \rightarrow \begin{cases} x: (1-2) \times \frac{1}{2} = -\frac{1}{2} \\ y: (4 \times 2) \times -1 + 1 = -7 \end{cases} \rightarrow \left(-\frac{1}{2}, -7\right)$$

$$x \cdot y = \left(-\frac{1}{2}\right)(-7) = \frac{7}{2}$$

$$D_f = (a, 4] \rightarrow D_{f(n-1)} = (a+1, 8] \cap D_{f(n-1)+g(n+1)} = (-2, 8]$$

$$D_g = [-1, b) \rightarrow D_{g(n+1)} = [-2, b-1) \rightarrow D_{f(n-1)+g(n+1)} = (-2, 8]$$

$$\Rightarrow \begin{cases} b-1 = 8 \rightarrow b = 9 \\ a+1 = -2 \rightarrow a = -3 \end{cases} \Rightarrow a-b = -3-(9) = \textcircled{-12}$$

$$y_1 = f\left(\frac{x}{2}+1\right) \Rightarrow \begin{cases} x=0 \rightarrow 3, 0 \\ x=-2 \rightarrow -\frac{1}{2} \end{cases} \Rightarrow D_{y_1} = \left[-\frac{1}{2}, 3, 0\right] \rightarrow \textcircled{\text{noob}}$$

$$y_2 = \sqrt{|2f(x)-3|} \Rightarrow \sqrt{|2([-1, 2]) - 3|} = \sqrt{|[-2, 4] - 3|} = \sqrt{[0, 0]} =$$

$$y_2 \rightarrow \textcircled{[0, \sqrt{5}]}$$

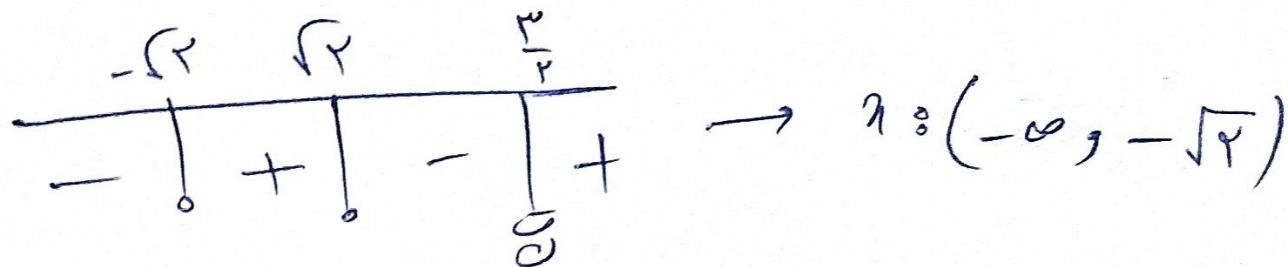
$$f(x) = \left| \frac{x-2+1}{2(x-2)+1} \right| + 1 = \left| \frac{x-1}{2x-3} \right| + 1 = g(x)$$

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

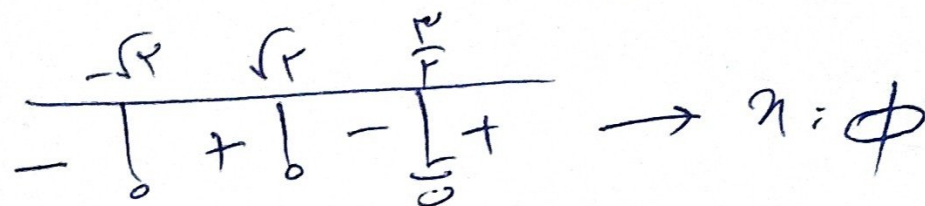
$$\frac{x + \frac{x-1}{2x-3} + 1}{\frac{x + \frac{x-1}{2x-3} + 1}{\frac{x + \frac{x-1}{2x-3} + 1}} = \frac{x + \frac{x-1}{2x-3} + 1}{\frac{x + \frac{x-1}{2x-3} + 1}} = \frac{x + \frac{x-1}{2x-3} + 1}{\frac{x + \frac{x-1}{2x-3} + 1}}$$

دارای جواب

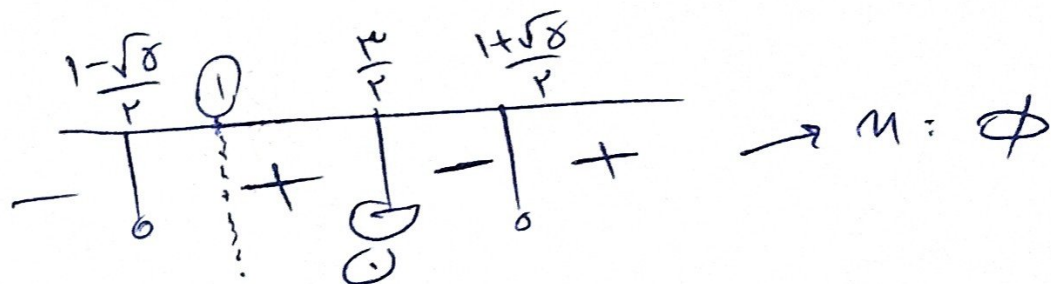
$$\frac{\gamma n^{\gamma} - \varepsilon}{\gamma n - \gamma} < 0 \quad ; \quad n < 1$$



$$\frac{\gamma n^{\gamma} - \varepsilon}{\gamma n - \gamma} < 0 \quad ; \quad n > \frac{\gamma}{r}$$



$$\frac{\gamma (n^{\gamma} - n - 1)}{\gamma n - \gamma} < 0 \quad ; \quad 1 \leq n \leq \frac{\gamma}{r}$$



جواب η = $(-\infty, -\sqrt{2})$