

دوازدهم رفت

سپاره شریف: ۱۸, ۲۵

نام = فاطمه سیدجانی

$$D_{f(n)} = [-2, 4] \Rightarrow f\left(\frac{3n+2}{5}\right) \Rightarrow -2 \leq \frac{3n+2}{5} \leq 4 \Rightarrow -10 \leq 3n+2 \leq 20 \Rightarrow$$

(۲)

$$-12 \leq 3n \leq 18 \Rightarrow -4 \leq n \leq 6 \Rightarrow \text{دامنه مورد نظر} = [-4, 6]$$

$$D = [-3, 3] \xrightarrow{f(3n-2)} D_{f(n)} = [-1, 7]$$

(۲)

$$f\left(\frac{3n+1}{2}\right) \rightarrow D = [-1, 5]$$

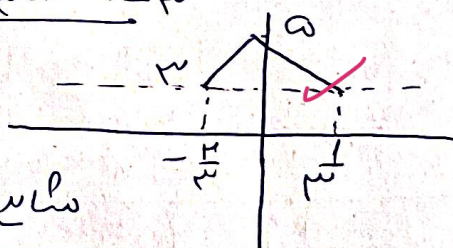
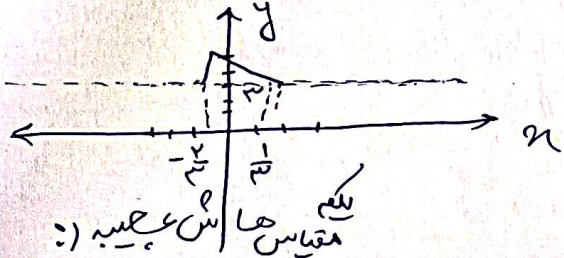
(۱, ۷۵)

$$\xrightarrow{\text{مابیناری}} D_{f(n)} = [-1, 5] \Rightarrow f(2-5n) \Rightarrow$$

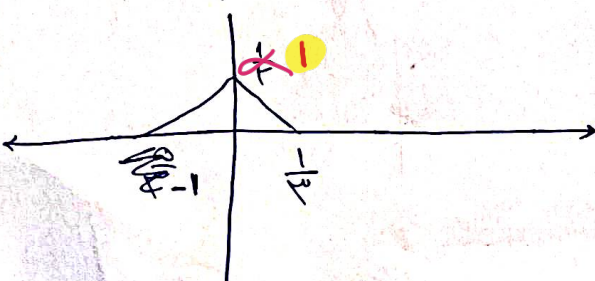
$$-1 \leq 2-5n \leq 5 \Rightarrow -3 \leq -5n \leq 3 \Rightarrow -\frac{3}{5} \leq n \leq \frac{3}{5} \Rightarrow D = \left[-\frac{3}{5}, \frac{3}{5}\right]$$

$$D_f = [-1, 2] \Rightarrow D_{f(3n+1)} = -1 \leq 3n+1 \leq 2 \Rightarrow -2 \leq 3n \leq 1 \Rightarrow -\frac{2}{3} \leq n \leq \frac{1}{3}$$

(۲)



$$-1 \leq n \leq \frac{1}{3} \Leftrightarrow -1 \leq -3n \leq 2 \Leftrightarrow 1 \leq 2-3n \leq 5 \Leftrightarrow \text{دامنه}$$



$$f(2) = 2 \rightarrow \frac{1}{3} f(2-3n) \Rightarrow n=0, y=1$$

(۱, ۷۵)

رفت

صفحه آخر

رأس اولیہ سری راہی کیسے

$$n_s = \frac{-\frac{2}{a}}{-\frac{2}{a}} = \frac{2}{a} \rightarrow y_s = \frac{21}{2a} \Rightarrow S \left(\frac{2}{a}, \frac{21}{2a} \right)$$

رأس حیدر سری: $(\frac{2}{a}, \frac{21}{2a}) \rightarrow \begin{cases} انتقال = \frac{17}{a} \\ انتقال محوری = \frac{21}{2a} \end{cases} \Rightarrow -\frac{1}{2} \left(x - \frac{17}{a} \right)^2 + \frac{2}{a} \left(x - \frac{17}{a} \right) + 1 + \frac{21}{2a}$

$$= -\frac{1}{2} (x - \frac{2}{a})^2 + \frac{2}{a} \Rightarrow (x - \frac{2}{a})^2 = 0 \rightarrow x = \frac{2}{a}$$

↖ ↗

سری $n_s = 1 \Rightarrow 3n + 2 = 1 \Rightarrow n = -\frac{1}{3}$

سری $y_s = 1 - 2f(1) = 1 - 2(4) = -7$

$\Rightarrow \begin{cases} \alpha = -\frac{1}{3} \\ \beta = -7 \end{cases} \Rightarrow \alpha\beta = \frac{7}{3}$

$Df = (a, 4]$ $Df(n-1) : a < n-1 \leq 4 \Rightarrow a+1 < n \leq 5$

$Dg = [-1, b)$ $Dg(n+1) : -1 \leq n+1 < b \Rightarrow -2 \leq n < b-1$

نقطہ حالت ملے

$\Rightarrow \begin{cases} a+1 = -2 \rightarrow a = -3 \\ b-1 = 5 \rightarrow b = 6 \end{cases} \Rightarrow a-b = -9$

$f\left(\frac{n}{2} + 1\right) \Rightarrow Df(n) = \left[-\frac{1}{2}, \frac{3}{2}\right]$

$n = -3 \rightarrow n = 5$

$y_1 = \sqrt{|2f(n)-3|}$ سے بڑھتا ہے اور $y_2 = \sqrt{|2f(n)-3|}$ سے کم ہوتا ہے

$-1 \leq f(n) \leq 2 \Rightarrow -2 \leq 2f(n) \leq 4 \Rightarrow -5 \leq 2f(n)-3 \leq 1 \Rightarrow$

$0 \leq |2f(n)-3| \leq 5 \Rightarrow 0 \leq \sqrt{|2f(n)-3|} \leq \sqrt{5} \Rightarrow R_f = [0, \sqrt{5}]$

ابتدائی شکل نمودار را رسم می کنیم

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

$n+g(n) < 0 \Rightarrow g(n) < -n$

نقطہ تقاطع

$g(n) = \left| \frac{n-1}{2n+1} \right| + 1 = -n \Rightarrow \frac{n-1}{2n+1} = 1+n \rightarrow n = -1$

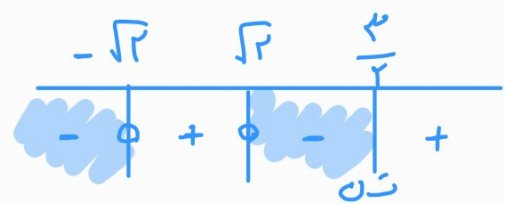
جواب: $(-\infty, -1]$

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

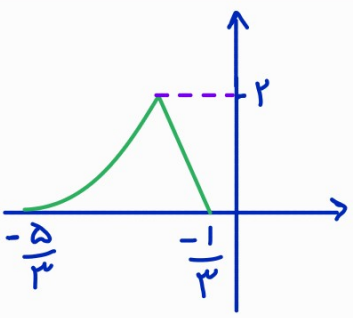
از به قدر مطلق بزرگتر شده پس باید مثبت باشد: $-1-n > 0 \rightarrow n < -1$

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

$$n < -1 \rightarrow \frac{n-1}{2n-3} < -1-n \rightarrow \frac{2n^2-4}{2n-3} < 0 \rightarrow \frac{2(n-\sqrt{2})(n+\sqrt{2})}{2n-3} < 0$$

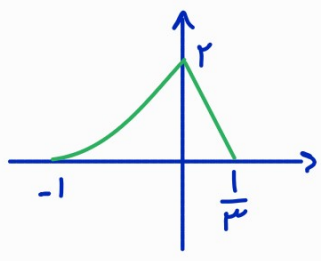


$$n < -1 \rightarrow n < -\sqrt{2} \rightarrow (-\infty, -\sqrt{2})$$



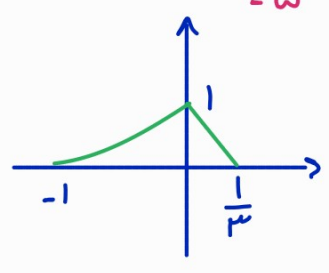
$$y = f(-3n)$$

واحد به راست $\frac{2}{3}$



$$y = f(-3(n - \frac{2}{3}))$$

$$y = f(2-3n)$$



$$y = \frac{1}{3} f(2-3n)$$