

دوازدهم دختر (B)

کلیف

۱۷

عاضه فضل الله

(۲) -۱

$$-2 \leq \frac{x_n + 2}{0} \leq 2 \xrightarrow{\times 0} -1 \leq x_n + 2 \leq 2 \xrightarrow{-2} -1 \leq x_n \leq 1$$

$$\xrightarrow{\div 2} -\frac{1}{2} \leq x_n \leq \frac{1}{2} \rightarrow D_f = [-\frac{1}{2}, \frac{1}{2}]$$

$$-2 \leq x_n \leq 2 \xrightarrow{\times 2} -4 \leq x_n \leq 4 \xrightarrow{-2} -6 \leq x_n - 2 \leq 2 \quad (۲) -۲$$

$$\rightarrow D_f = [-6, 2]$$

$$-1 \leq x_n \leq 3 \xrightarrow{\times 2} -2 \leq x_n \leq 6 \xrightarrow{+1} -1 \leq x_n + 1 \leq 7 \quad -۳$$

$$\xrightarrow{\div 2} -\frac{1}{2} \leq \frac{x_n + 1}{2} \leq \frac{7}{2} \quad (۱,۷۵)$$

$$-1 \leq 2 - 5x_n \leq 5 \xrightarrow{-2} -3 \leq -5x_n \leq 7 \xrightarrow{\div (-5)}$$

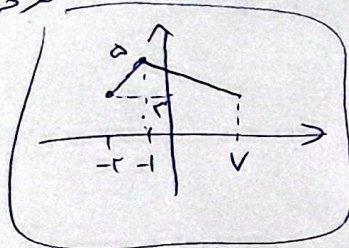
$$-\frac{3}{5} \leq x_n \leq \frac{7}{5}$$

$$D_f = (-\frac{3}{5}, \frac{7}{5}]$$

غلطی زیادی داشت
رفته بود

$$-1 \leq x_n \leq 1 \rightarrow -2 \leq x_n \leq 2 \xrightarrow{+1} -1 \leq x_n + 1 \leq 3 \quad -۲$$

عرض ما ۲ برابر ۳+۱



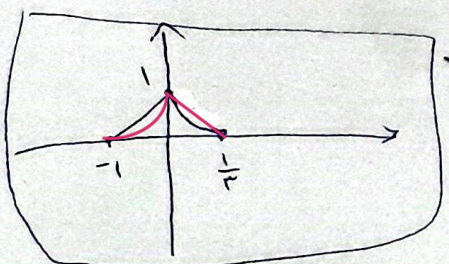
صفحه آخر

$$1 \leq x_n \leq 5$$

(۱,۷۵) -۵

$$1 \leq 2 - x_n \Rightarrow x_n \leq \frac{1}{2}$$

$$2 - x_n \leq 5 \Rightarrow x_n \geq -1 \Rightarrow -1 \leq x_n \leq \frac{1}{2}$$



صفحه آخر

(2) - 4

$$y = -\frac{1}{r}n^r + \frac{r}{\delta}n + 1 \rightarrow y = -\frac{1}{r}(n-r)^r + r$$

$$\rightarrow 0 = r + \frac{1}{r}(n-r)^r \rightarrow (n-r)^r = -r^2$$

$$n - r = \pm r \quad (n = \sqrt{r})$$

(2) - 5

S/C

$$r_n + r = 1 \rightarrow n = \frac{1}{r}$$

$$y = 1 - r(r) = -r$$

$$\alpha = \frac{1}{r}, \beta = -r$$

$$\alpha \beta \leq \frac{y}{r}$$

(2) - 6

$$a < n-1 \leq r \rightarrow a+1 \leq n \leq r$$

$$-1 \leq n+1 < b \rightarrow -r \leq n < b-1$$

$$(a+1, r] \cap [-r, b-1) = (-r, r)$$

$$a+1 = -r \rightarrow a = -r-1$$

$$b-1 = r \rightarrow b = r+1$$

$$a-b = -r-1-r = -2r-1$$

$$-1 \leq f(n) \leq r \xrightarrow{\times r} -r \leq rf(n) \leq r^2 \xrightarrow{+r} -r \leq rf(n) - r \leq r^2 - r$$

(1) - 9

$$\rightarrow 0 \leq |rf(n) - r| \leq r^2 - r \xrightarrow{\sqrt{}} 0 \leq \sqrt{|rf(n) - r|} \leq \sqrt{r^2 - r}$$

$$R_f = [0, \sqrt{r^2 - r}]$$

صفتی افرد

$$-r \leq \frac{n}{r} \leq r \xrightarrow{\times r} -r^2 \leq n \leq r^2$$

$$D_f = [-r^2, r^2]$$

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

$$(-r, r) - 1 \rightarrow (-r-1, r-1)$$

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

$$r < -r \text{ or } n > 1$$

$$n+1 < 0 \rightarrow n < -1$$

$$\left| \frac{n-1}{r_n-r} \right| = \frac{n-1}{r_n-r}$$

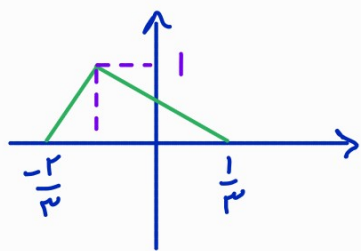
$$(n+r)(n-1) > 0$$

$$\frac{n-1}{r_n-r} < -n-1$$

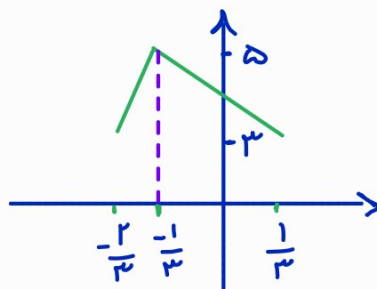
$$r_n - r < 0$$

$$(n-1) > (-n-1)(r_n-r) \quad n-1 \geq nr^2 - n + r \rightarrow -r^2 + r - r > 0$$

صفتی افرد

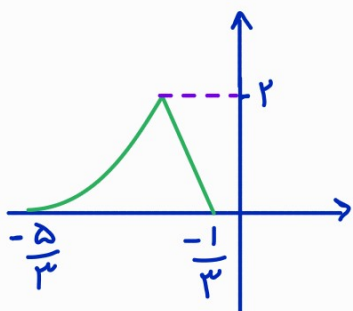


$$y = f(r_n + 1)$$



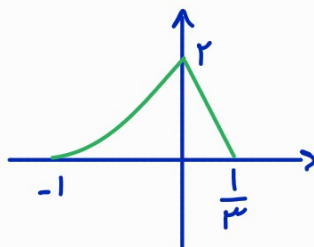
$$y = 2f(r_n + 1) + 3$$

-۴



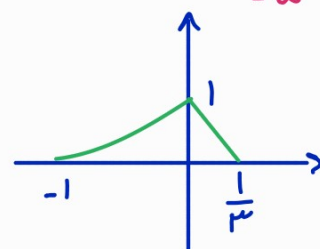
$$y = f(-r_n)$$

واحد به راست $\frac{2}{3}$



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

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



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

-۵

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

-۹

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

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

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

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

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

-۱۰

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



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