

روزنامه دفتر ۱۵ شهریور

تألیف شماره هفت ۷

ویانا شیراز

$$D_{f(n)} = [-2, 2]$$

$$0 \leq p \leq f\left(\frac{3n+2}{4}\right)$$

سوال یک (۲)

$$\begin{aligned} \text{5} \quad L \quad -2 \leq x \leq 2 & \Rightarrow -2 \leq \frac{3n+2}{4} \leq 2 \Rightarrow -10 \leq 3n+2 \leq 10 \Rightarrow -12 \leq 3n \leq 8 \\ & \Rightarrow -4 \leq n \leq 4 \Rightarrow D_{f'} = [-4, 4] \quad \text{جواب} \end{aligned}$$

$$f(n-2) \Rightarrow D = [-2, 2]$$

$$D_{f(n)} = ? = [-8, 8] \quad \text{جواب}$$

سوال دو (۲)

$$\begin{aligned} \text{10} \quad L \quad -2 \leq x \leq 2 & \Rightarrow -4 \leq 3n \leq 4 \Rightarrow -\frac{4}{3} \leq n \leq \frac{4}{3} \\ & \Rightarrow -1 \leq 3n-2 \leq 7 \Rightarrow -1 \leq f \leq 7 \quad \text{داخل } f \end{aligned}$$

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

$$f(2-5n) \Rightarrow D = ?$$

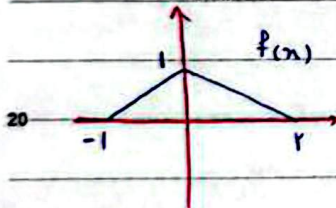
سوال سه (۲)

$$\begin{aligned} \text{15} \quad L \quad -1 \leq x \leq 3 & \Rightarrow -3 \leq 3n \leq 9 \Rightarrow -1 \leq 3n+1 \leq 10 \Rightarrow -1 \leq \frac{3n+1}{2} \leq 5 \\ & \Rightarrow -1 \leq f \leq 5 \Rightarrow -1 \leq 2-5n \leq 9 \Rightarrow -3 \leq -5n \leq 3 \\ & \Rightarrow \frac{3}{5} \geq n \geq -\frac{3}{5} \Rightarrow D_{f'} = \left(-\frac{3}{5}, \frac{3}{5}\right] \quad \text{جواب} \end{aligned}$$

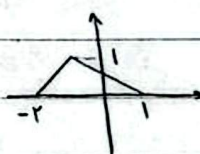
$$f(0) = 1$$

$$y = 2f(3n+1) + 3 \quad ?$$

سوال چهار (۲)

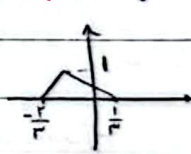


$$\text{① } f(n+1)$$

یک واحد چپ
در راستای محور طول ها

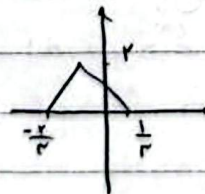
$$\text{② } f(3n+1)$$

۳ واحد چپ شوند



$$\text{③ } 2f(3n+1)$$

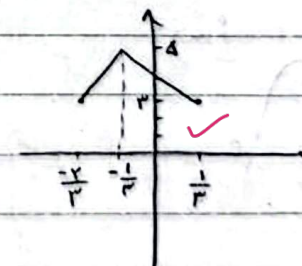
۲ واحد، ۲ برابری شوند



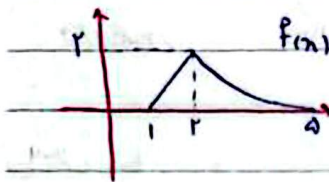
$$\text{④ } 2f(3n+1) + 3$$

در راستای محور عرض ها
۳ واحد بالا

$$f\left(-\frac{1}{3}\right) = 0$$



جواب

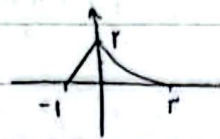


$$y = \frac{1}{r} f(r - rn) ?$$

سوال پنج

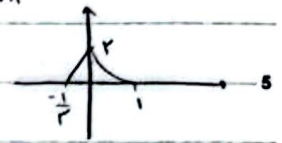
$$f(r) = 2$$

① $y = f(r + rn)$
 در راستای محور طول ها
 بزرگ می رویم



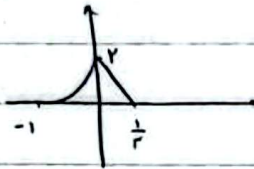
$$② y = f(r + rn)$$

نهارا 2
 ÷ 2



$$③ y = f(r - rn)$$

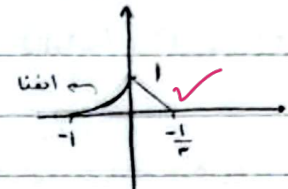
قرینه نسبت به محور طول ها



$$④ y = \frac{1}{r} f(r - rn)$$

نهارا نصف می شوند

$$f(0) = 1$$



جواب

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

سیار
 انتقال

(4,2) راس

قطع محور n صاف

سوال شصت

$$\frac{-b}{2a} = \frac{-\frac{2}{3}}{2 \times (-\frac{1}{3})} = \frac{2}{5} \Rightarrow -\frac{1}{3} \times \frac{4}{25} + \frac{2}{3} \times \frac{4}{25} + 1 = -\frac{4}{75} + \frac{8}{75} + 1 = \frac{28}{75}$$

راس
 اولیه

$$\frac{2}{3} \times \frac{4}{25}$$

②

15

$$\text{انتقال افقی} \rightarrow f\left(\frac{2}{5}\right) = \frac{17}{5} \quad \text{انتقال عمودی} \rightarrow \frac{2}{3} \times \frac{28}{75} = \frac{56}{225}$$

$$y = -\frac{1}{3}x^2 + \frac{2}{3}x + 1 = -\frac{1}{3}\left(x - \frac{2}{5}\right)^2 + \frac{28}{75} \Rightarrow -\frac{1}{3}\left(x - \frac{2}{5}\right)^2 + \frac{28}{75} = 0$$

قطع محور x صاف

$$\Rightarrow y = -\frac{1}{3}\left(x - \frac{2}{5}\right)^2 + \frac{28}{75} = 0 \Rightarrow y = -\frac{1}{3}\left(x - \frac{2}{5}\right)^2 = -\frac{28}{75}$$

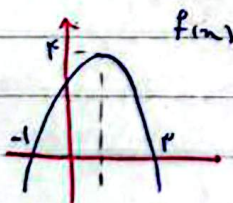
سیار از انتقال

$$\Rightarrow y = \left(x - \frac{2}{5}\right)^2 = 9 \Rightarrow \begin{cases} x - \frac{2}{5} = 3 \Rightarrow x = \frac{17}{5} \\ x - \frac{2}{5} = -3 \Rightarrow x = -\frac{13}{5} \end{cases}$$

جواب

جواب

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$$y = 1 - 2f(rn + r) \xrightarrow{\text{راس}} (\alpha, \beta)$$

سوال هفت

$$f(rn + r) \Rightarrow (1, 2) \Rightarrow f(1) = 4$$

$$\begin{cases} rn + r = 1 \Rightarrow rn = -1 \Rightarrow n = -\frac{1}{r} \Rightarrow f\left(-\frac{1}{r}\right) = 4 \\ 1 - 2f(1) = 1 - 2 \times 4 = -7 \end{cases}$$

$$\alpha = -\frac{1}{r}, \beta = -7 \Rightarrow \alpha\beta = -\frac{1}{r} \times -7 = \frac{7}{r}$$

جواب

25

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$$D_f = (a, c] \quad , \quad D_g = [-1, b)$$

$$a - b = ?$$

(سوال هست)

$$\Rightarrow -3 - 4 = -7 \quad \text{جواب}$$

(۲)

$$y = f(n-1) + g(n+1) \Rightarrow D_y = (-2, 4)$$

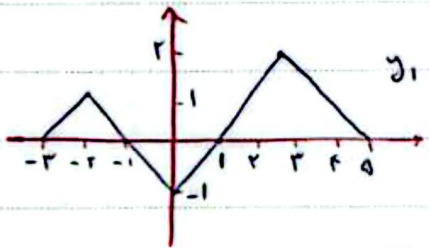
$$a < n-1 \leq c \xrightarrow{+1} a+1 < n \leq c \Rightarrow D_{f(n-1)} = (a+1, c]$$

$$-1 \leq n+1 < b \xrightarrow{-1} -2 \leq n < b-1 \Rightarrow D_{g(n+1)} = [-2, b-1)$$

 $\xrightarrow{\text{اشتراک}} (-2, 4)$

$$\Rightarrow b-1 = 4 \Rightarrow b = 5$$

$$a+1 = -2 \Rightarrow a = -3$$



$$y_1 = f\left(\frac{x}{2} + 1\right)$$

بر دامنه f تابع
و برد این تابع برابر است

$$y_r = \sqrt{|2f(n) - 3|}$$

$$D_{y_r} = ? \quad R_{y_r} = ?$$

(سوال نه)

(۲)

$$-3 \leq x \leq 5 \xrightarrow{\div 2} -\frac{3}{2} \leq \frac{x}{2} \leq \frac{5}{2} \xrightarrow{+1} -\frac{1}{2} \leq \frac{x}{2} + 1 \leq \frac{7}{2}$$

$$-\frac{1}{2} \leq f \leq \frac{7}{2} \quad D_{y_r} = \left[-\frac{1}{2}, \frac{7}{2}\right] \quad \text{جواب}$$

$$-1 \leq f(n) \leq 2 \xrightarrow{\times 2} -2 \leq 2f(n) \leq 4 \xrightarrow{-3} -5 \leq 2f(n) - 3 \leq 1$$

$$\text{اگر از کد تابع} \Rightarrow 0 \leq |2f(n) - 3| \leq 4 \Rightarrow 0 \leq \sqrt{|2f(n) - 3|} \leq 2$$

$$R_{y_r} = [0, 2] \quad \text{جواب}$$

$$f(n) = \left| \frac{n+1}{n-3} \right| \xrightarrow{\text{داده است}} \left| \frac{n-2+1}{2(n-2)+1} \right| = \left| \frac{n-1}{2n-3} \right|$$

(سوال ده)

$$\text{یک داده است} \Rightarrow \left| \frac{n-1}{2n-3} \right| + 1 = g(n)$$

(۲)

$$-1 < x < -n-1$$

$$n + \left| \frac{n-1}{2n-3} \right| + 1 < 0 \Rightarrow \left| \frac{n-1}{2n-3} \right| < -n-1$$

$$\Rightarrow n+1 + \frac{n-1}{2n-3} < 0 \Rightarrow \frac{(n+1)(2n-3) + (n-1)}{2n-3} < 0 \Rightarrow \frac{2(n-2)}{2n-3} < 0$$

که مخرج منفی باشد و دامن

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$$x^2 - r > 0 \Rightarrow x^2 > r \Rightarrow \left. \begin{array}{l} x > \sqrt{r} \\ x < -1 \end{array} \right\} \Rightarrow (-\infty, -\sqrt{r}) \cup (\sqrt{r}, \infty) \text{ جواب}$$