

(الف) $f(x) [-\epsilon, 2]$ $f(x) \rightarrow Df = ?$

$$-\epsilon \leq x-2 \leq 2 \xrightarrow{+2} -\epsilon+2 \leq x \leq 4 \xrightarrow{\div 2} -\frac{\epsilon}{2} \leq x \leq \frac{4}{2}$$

$$Df = \left[-\frac{\epsilon}{2}, \frac{4}{2}\right]$$

(2)

(ب) $f(x-2) [-\epsilon, -2]$ $f(x) \rightarrow Df = ?$

$$-\epsilon \leq x \leq -2 \xrightarrow{\times 2} -1\epsilon \leq x \leq -4 \xrightarrow{-2} -1\epsilon-2 \leq x-2 \leq -6$$

$$\Rightarrow Df = [-1\epsilon-2, -6]$$

$$f(x) = x + \sqrt{x-2}$$

(سوال 2)

دو تابع به صورت $f(x) = x-2 + \sqrt{(x-2)-2} = x-2 + \sqrt{x-4}$

تغییر متغیر

معبر $x=y$ تقریب جایی
y و x

$$\Rightarrow y = (x-2) + \sqrt{x-4} \Rightarrow x = y-2 + \sqrt{y-4}$$

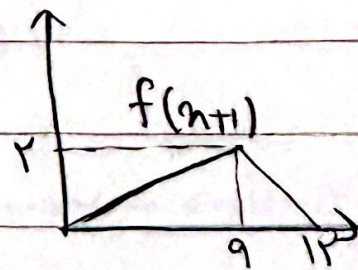
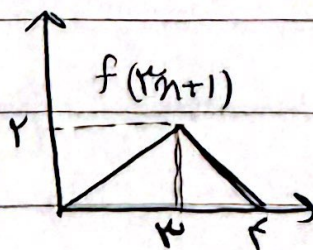
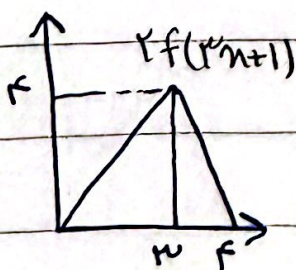
 $x=y$ متغیر جدید اول

(2)

$$\Rightarrow y = y-2 + \sqrt{y-4} \Rightarrow \sqrt{y-4} = 2 \Rightarrow y-4 = 4 \Rightarrow y = 8$$

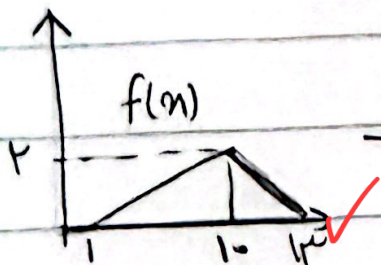
$$g(x) = 2f(x+1) \quad f(x)$$

(سوال 2)



* متغیر جدید

آپادانا



$$S = \frac{r \times (1+r-1)}{r} = \boxed{1r}$$

(y)

$$A(r, -r) \quad y = f(n) \quad y = a + rf\left(\frac{n-a}{r}\right) \quad \text{سوال ٤}$$

$$y = rn - 1 \quad a = ?$$

$$f(r) = -r$$

$$rn - 1 = a + rf\left(\frac{n-a}{r}\right) \Rightarrow f\left(\frac{n-a}{r}\right) = \frac{rn - 1 - a}{r}$$

$$n - a = \epsilon$$

$$rn - a = +r$$

$$\left. \begin{array}{l} n - a = \epsilon \\ rn - a = +r \end{array} \right\} \rightarrow \begin{array}{l} n = -r \\ a = -4 \end{array}$$

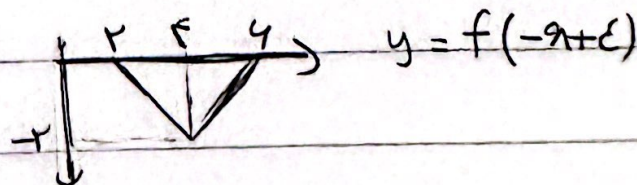
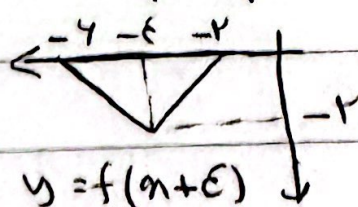
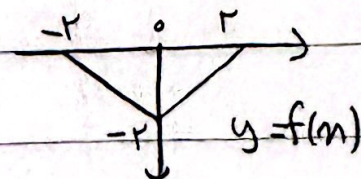
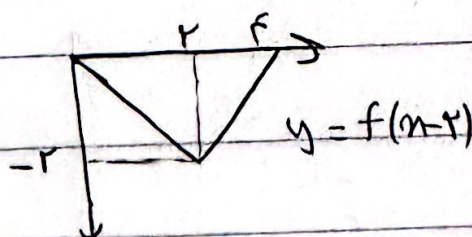
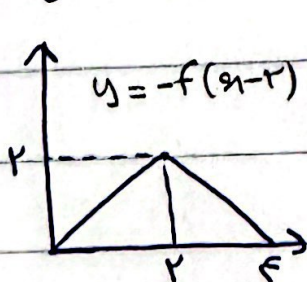
✓

(y)

$$\left\{ \begin{array}{l} \frac{n-a}{r} = r \Rightarrow \underline{n-a = \epsilon} \\ \frac{rn-a}{r} = -r \\ \Rightarrow \underline{rn-a = +r} \end{array} \right.$$

$$y = -f(n-r) \quad y = \frac{1}{r} f(\epsilon - n) \rightarrow \text{مس}$$

(مس)



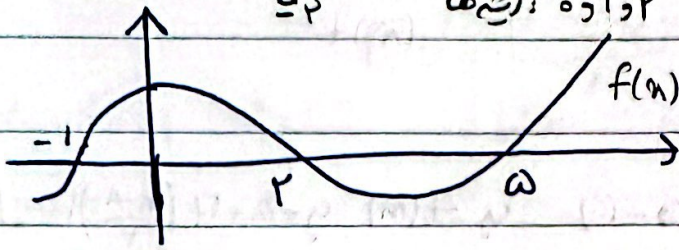
(y)

$$\boxed{y = \frac{1}{r} f(-n + \epsilon)}$$

تجربة

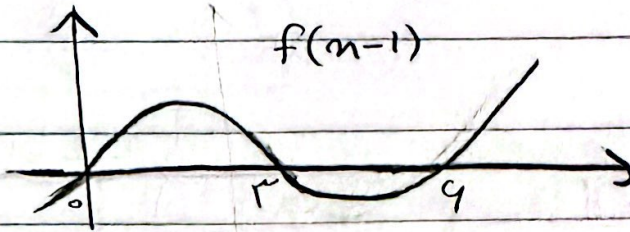
$$y = \sqrt{-(n+2)f(2n-1)} \rightarrow \text{نیز برای } y=0$$

(سوال 40)

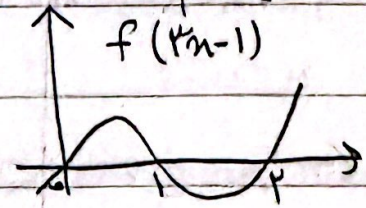


$$\begin{array}{ccccccc} -2 & 0 & 1 & 2 \\ - & + & - & + & - \end{array}$$

$$Df = [-2, 0] \cup [1, 2]$$



$$f(2n-1) = 0 \text{ و } 2 \rightarrow \text{نیز مطابق شکل}$$



(سوال 41)

$$f(n) = |2n-4| + 1$$

$$\text{کدام } n \text{ که } f(n) = 5 \rightarrow f(n) = |2(n+k)-4| + 1$$

$$\text{برای } n=3 \rightarrow f(n) = |2(n+k)-4| + 1 = 5 \rightarrow g(n) = |2n+2k-4| - 2$$

$$\text{حل بی‌فورد باشد} \rightarrow (0, 5) \Rightarrow f(n) = |-4| + 1 = 5$$

$$\Rightarrow g(n) = |2k-4| - 2 = 5 \rightarrow |2k-4| = 7$$

$$\rightarrow 2k-4 = 7 \rightarrow k = 5.5$$

$$\rightarrow 2k-4 = -7 \rightarrow k = -1.5$$

(سوال 42)

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

$$\text{درین نسبت به } n \text{ ساده شود} \rightarrow f(n) = \frac{-(2n-1)}{n+1}$$

$$\text{برای } n=3 \rightarrow f(n) = -\frac{(2n-1)}{\frac{n}{2}+1} = \frac{1-\frac{2}{3}n}{\frac{n}{2}+1} = \frac{3-2n}{n+3}$$

$$g(n) = \frac{3-2n}{n+3} + k \quad \text{چون انتال عددی بوده و تعداد نقاط بی‌فورد ما یکی است}$$

$$k=4 \rightarrow \text{چون مؤلفه افقی تابع } g(n) \text{ باید برابر با } f(n) \text{ باشد}$$

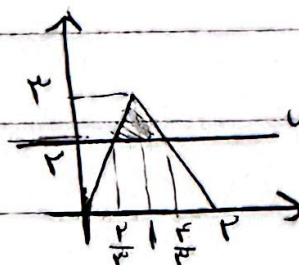
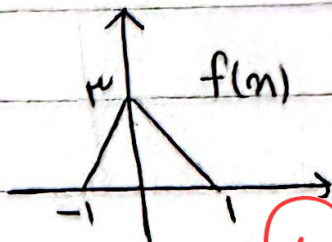
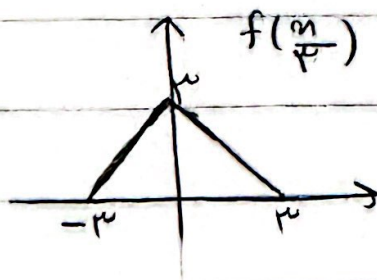
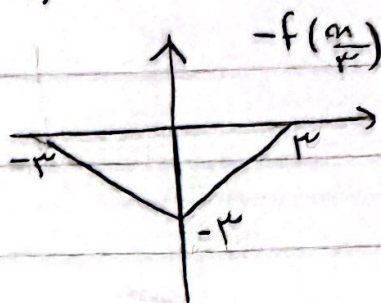
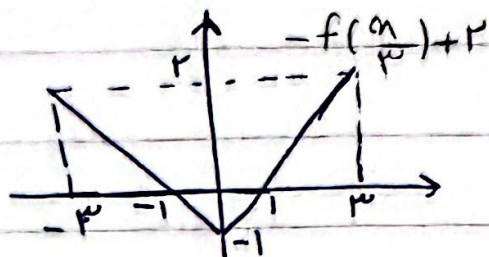
(4)

آپادانا

سوال (9)

$$y_1 = -f\left(\frac{a}{r}\right) + r$$

$$y_r = f(n-1)$$



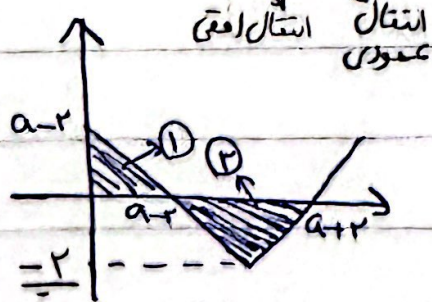
$$S = 1 \times \left(\frac{r}{r} - \frac{r}{r} \right) = \boxed{\frac{1}{r}}$$

$$f(n) = |n - a| - r$$

$$f\left(\frac{1}{a}\right) = 5$$

$$S_{\text{area}} = \frac{9}{r}$$

سوال (10)



$$S = \frac{(a-r)(a-r)}{r} + \frac{((a+r) - (a-r)) \times r}{r} = \frac{9}{r}$$

$$\Rightarrow \frac{(a-r)(a-r)}{r} = \frac{1}{r} \Rightarrow (a-r)^2 = 1$$

$$|a-r| = 1 \rightarrow a-r=1 \rightarrow a=r \text{ ق ق}$$

$$\rightarrow a-r=-1 \rightarrow a=r-1 \rightarrow a-r=0 \rightarrow 0 \text{ ق ق}$$

$$f(n) \rightarrow |n-r| - r \rightarrow f\left(\frac{1}{r}\right) = \left| \frac{1}{r} - r \right| - r = \frac{1}{r} - r = \boxed{\frac{r}{r}}$$

تکلیف