

(الف) $f(x) [-\frac{1}{2}, 2]$ $f(3x-2) \Rightarrow D_f = ?$

$$-\frac{1}{2} \leq 3x-2 \leq 2 \xrightarrow{+2} -\frac{1}{2} \leq 3x \leq 4 \xrightarrow{\div 3} -\frac{1}{6} \leq x \leq \frac{4}{3}$$

$$D_f = \left[-\frac{1}{6}, \frac{4}{3}\right]$$

(ب) $f(3x-2) [-\frac{1}{2}, -2]$ $f(x) \Rightarrow D_f = ?$

$$-\frac{1}{2} \leq x \leq -2 \xrightarrow{\times 3} -\frac{1}{2} \leq 3x \leq -4 \xrightarrow{-2} -\frac{1}{2} \leq 3x-2 \leq -4$$

$$\Rightarrow D_f = [-\frac{1}{2}, -4]$$

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

(مسئله 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
و y

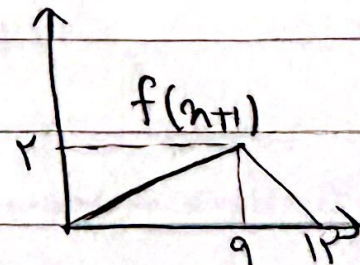
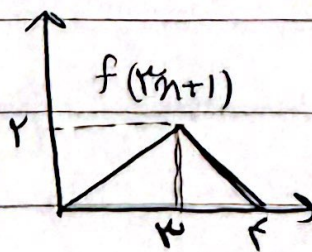
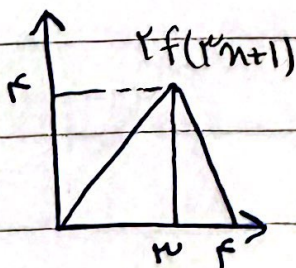
$$\Rightarrow y = (x-2) + \sqrt{x-4} \Rightarrow x = y-2 + \sqrt{y-4}$$

 $x=y$ متغیر جدید اول

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

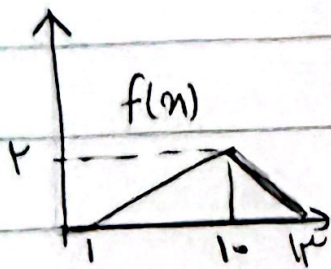
$$g(x) = 2f(3x+1) \quad f(x)$$

(مسئله 3)



* متغیر جدید

آپادانا



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

$A(r, -r) \quad y=f(n) \quad y=a+rf\left(\frac{n-a}{r}\right)$ (سوال 1)

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

$$f(r)=-r$$

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

$$\left\{ \begin{array}{l} \frac{n-a}{r}=r \Rightarrow \underline{n-a=r} \\ \frac{rn-1-a}{r}=-r \end{array} \right.$$

$$n-a=r$$

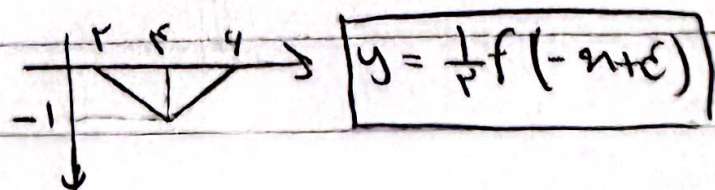
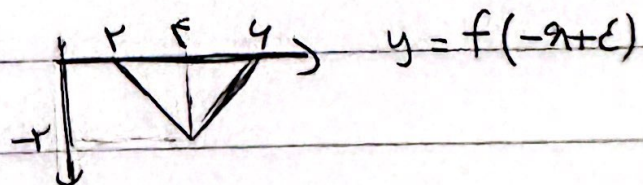
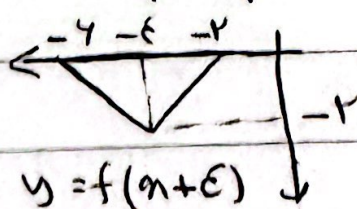
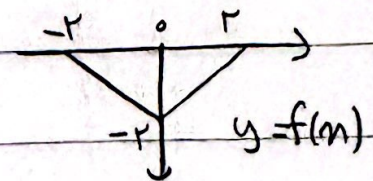
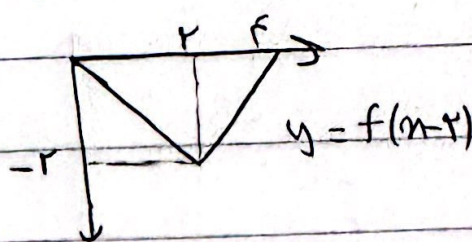
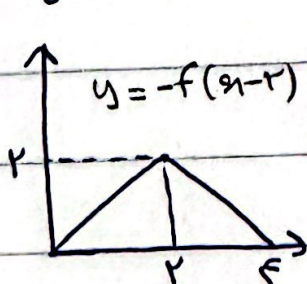
$$rn-1-a=-r$$

$$\left. \begin{array}{l} n-a=r \\ rn-1-a=-r \end{array} \right\} \rightarrow \begin{array}{l} n=-r \\ \boxed{a=-1} \end{array}$$

$$\Rightarrow \underline{rn-a=-r}$$

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

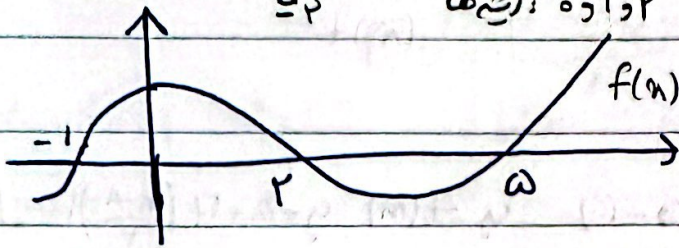
(مسألة)



تدريج

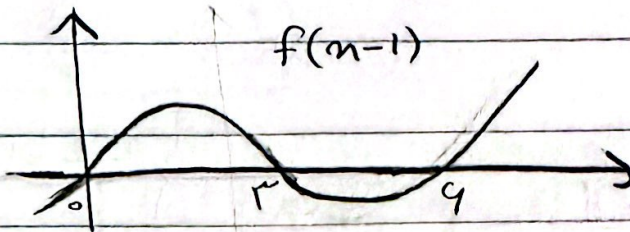
$$y = \sqrt{-(n+2)f(2n-1)} \rightarrow \text{برای اینکه این معادله معنی داشته باشد باید } y \geq 0$$

(سوال 40)

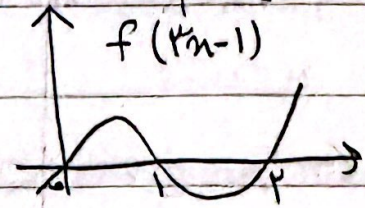


$$\begin{array}{ccccccc} & -2 & & 0 & & 1 & & 2 \\ & - & & + & & - & & + & & - \end{array}$$

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



$$\text{برای اینکه این معادله معنی داشته باشد باید } y \geq 0$$



(سوال 41)

$$f(n) = |2n-3|+1$$

$$\text{برای اینکه این معادله معنی داشته باشد باید } y \geq 0 \rightarrow f(n) = |2(n+k)-3|+1$$

$$\text{برای اینکه این معادله معنی داشته باشد باید } y \geq 0 \rightarrow f(n) = |2(n+k)-3|+1-3 \rightarrow g(n) = |2n+2k-3|-2$$

$$\text{حل می‌دهیم} \rightarrow (0, 0) \Rightarrow f(n) = |-3|+1 = 4$$

$$\Rightarrow g(n) = |2k-3|-2 = 4 \rightarrow |2k-3| = 6$$

$$\rightarrow 2k-3 = 6 \rightarrow k = 4.5$$

$$\rightarrow 2k-3 = -6 \rightarrow k = -1.5$$

(سوال 42)

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

$$\text{برای اینکه این معادله معنی داشته باشد باید } y \geq 0 \rightarrow f(n) = \frac{-(2n-1)}{n+1}$$

$$\text{برای اینکه این معادله معنی داشته باشد باید } y \geq 0 \rightarrow f(n) = -\frac{(2n-1)}{\frac{n}{2}+1} = \frac{1-\frac{2}{3}n}{\frac{n}{3}+1} = \frac{3-2n}{n+3}$$

$$g(n) = \frac{3-2n}{n+3} + k$$

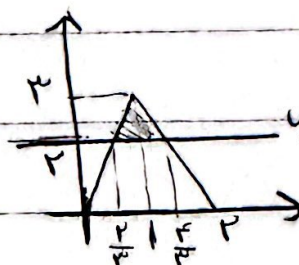
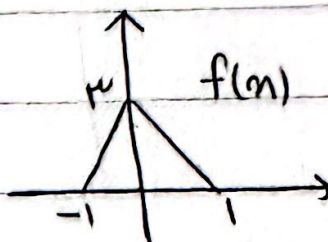
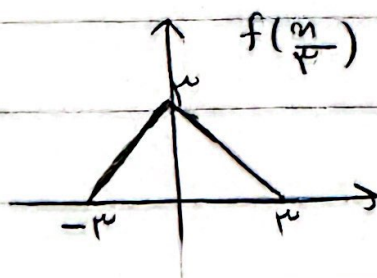
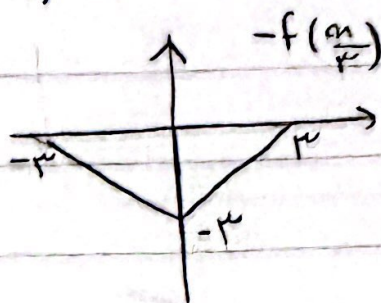
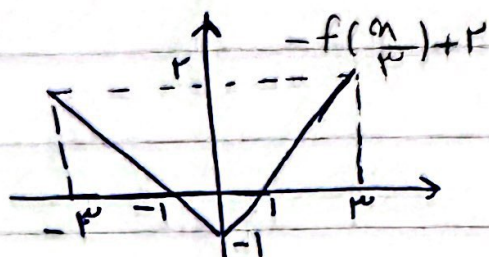
$$\text{برای اینکه این معادله معنی داشته باشد باید } y \geq 0 \rightarrow g(n) = \frac{3-2n}{n+3} + k$$

$$k = 4$$

آپادانا

سوال (9)

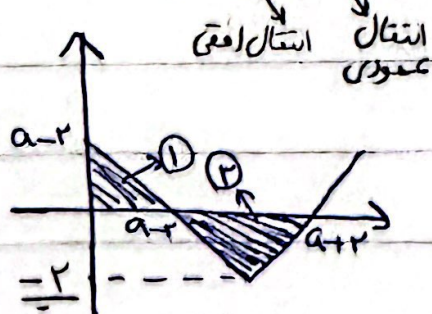
$$y_1 = -f\left(\frac{a}{r}\right) + r \quad y_r = f(n-1)$$



$$S = 1 \times \left(\frac{\frac{r}{2} - \frac{r}{2}}{r} \right) = \boxed{\frac{1}{r}}$$

$$f(n) = |n - a| - r \quad f\left(\frac{1}{a}\right) = 5 \quad S_{\text{area}} = \frac{9}{r} \quad a) =$$

سوال (10)



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

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

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

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

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

تکلیف