

پایه طابقی - بنام خاندان و خرد - تکلیف شماره ۶ { دوازدهم دختر A }

۱ (۲)

الف $f(x) = 2\sin^2\left(x + \frac{\pi}{3}\right) - 1$

$R_f \rightarrow \sin^2 \alpha : [0, 1] \rightarrow 2\sin^2 \alpha : [0, 2] \rightarrow 2\sin^2 \alpha - 1 : [-1, 1]$

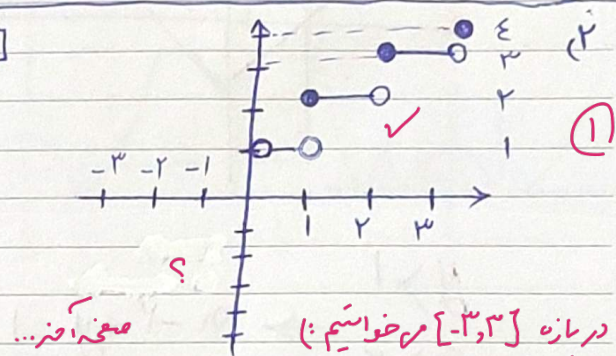
ب $g(x) = 3\cos^3 x - 4$

$R_g \rightarrow \cos^3 x : [-1, 1] \rightarrow 3\cos^3 x : [-3, 3] \rightarrow 3\cos^3 x - 4 : [-7, 1]$

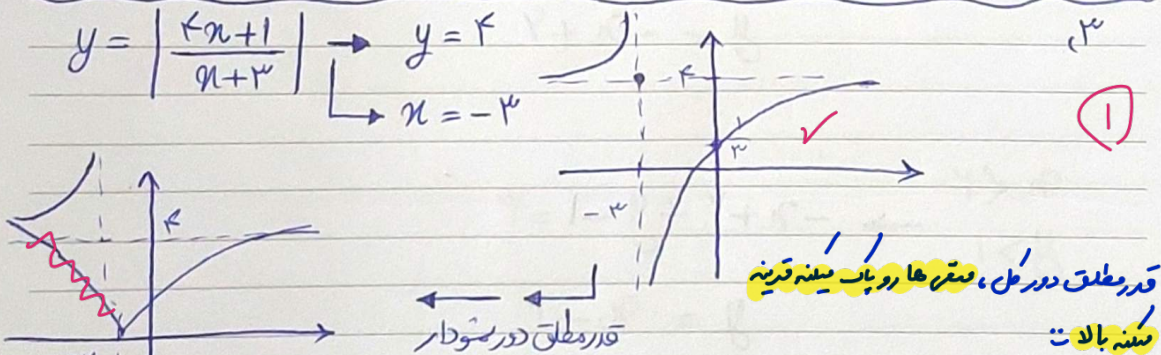
$y = \frac{x}{|x|} + [x]$

ظایف بنی

$\begin{cases} [-3, -2) \\ [-2, -1) \\ [-1, 0) \\ [0, 1) \\ [1, 2) \\ [2, 3) \\ [3] \end{cases}$

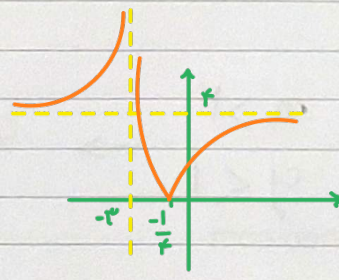
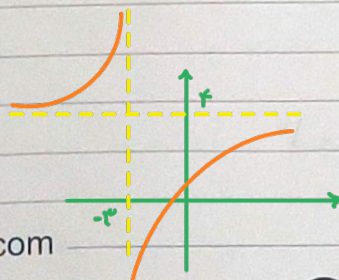


$y = \left| \frac{x+1}{x+3} \right| \rightarrow y = 4$
 $x = -3$



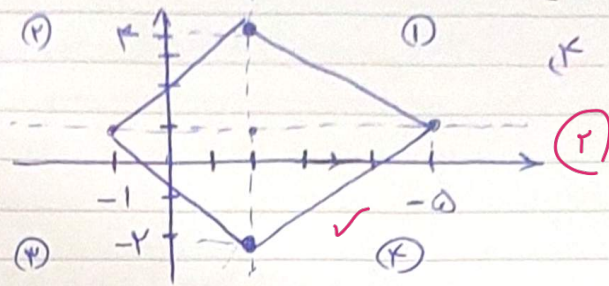
$y = \frac{x+1}{x+3}$

$y = \left| \frac{x+1}{x+3} \right|$



$$|x-r| + |y-1| = r$$

→ مربع است ☺



$$\textcircled{1} : \begin{matrix} x > 2 \\ y > 1 \end{matrix} \Rightarrow x-2+y-1=2 \rightarrow y = -x+4$$

⑦: $x < y \Rightarrow -x + y + y - 1 = 1 \rightarrow y = \underline{x+1}$

(*) $\begin{matrix} x < 2 \\ y < 1 \end{matrix} \Rightarrow -x + y + 1 = 0 \rightarrow y = -x$

Ⓚ: $\begin{matrix} u > r \\ y < 1 \end{matrix} \Rightarrow x - r - y + 1 = r \rightarrow y = x - r$

$$f(x) = n + \frac{1}{n} + \sqrt[n]{n + \frac{1}{n}} \rightarrow 0^y + y0 \quad \text{الف (ر)}$$

$\sqrt{n + \frac{1}{n}} = 0$

$R_f = [r + r\sqrt{r}, +\infty)$

$\left. \begin{array}{l} r + r\sqrt{r} \leftarrow \sqrt{r} \\ +\infty \leftarrow 1 \\ \leftarrow +\infty \end{array} \right\} \begin{array}{l} \text{دوسرے (میں سے) -} \\ \frac{-r}{r} = -1 \\ X^{-1} \rightarrow \text{میں سے دوسرے} \end{array}$

$[r, +\infty) \leftarrow \frac{1}{n} + r : * \quad n \geq 0$

$$y = 1 + \sin x - \sin x - \sin^2 x$$

۵. ب. $\frac{-2}{-2} = 1$ یکبار در انتهای اسم

$$\begin{aligned} & \rightarrow -\sin^2 x + \sqrt{3} \sin x + \sqrt{3} \\ & -1 - \sqrt{3} + \sqrt{3} = 0, \quad -1 + \sqrt{3} + \sqrt{3} = \sqrt{3} \end{aligned}$$

$$R_f = \begin{bmatrix} 0 & \kappa \end{bmatrix} \left\{ \begin{array}{l} 0 \leftarrow \frac{-1}{\kappa} \sin \alpha \\ \kappa \leftarrow 1 \end{array} \right.$$

$$f(n) = \frac{1}{3}n + 10 \quad D_f = \{1, 2, \dots, 9\}$$

۶ (۲)

$$R_f \rightarrow \left\{ 10 - \frac{1}{3}, 10 - \frac{2}{3}, \dots, 10 - \frac{8}{3}, 10 - \frac{9}{3} \right\}$$

اینگیبار

$$(9 \times 10) - \left(\frac{10}{3} + \frac{10}{3} + \frac{10}{3} + \frac{10}{3} + \frac{\Delta}{3} \right) \rightarrow 90 - 1\Delta = 7\Delta$$

$$\frac{4\Delta}{3} = 1\Delta$$

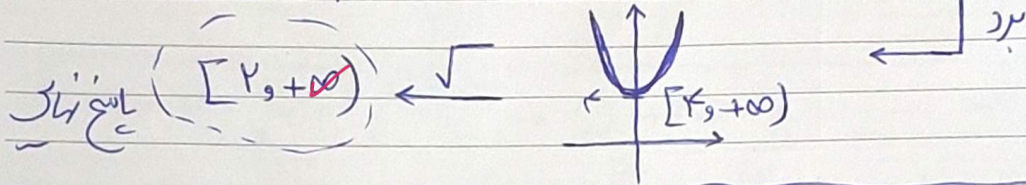
$$f(n) = \sqrt{an^2 + bn + c} \rightarrow \underline{a=6} \quad bn + c \rightarrow 0$$

۷ (۲)

$[2, +\infty) \rightarrow$ پس زیاد است

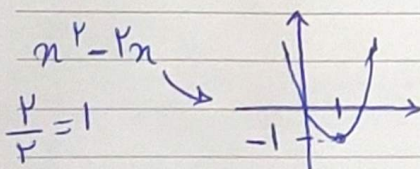
$\downarrow$
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$$\begin{cases} -2b + c = 0 \\ 3b + c = 1 \end{cases} \rightarrow \underline{b=1} \quad \underline{c=2} \quad \xrightarrow{\text{بازنویس}} \sqrt{n^2 + 4}$$



$$f(n) = \frac{n(n^2 - 4)}{n + 2} = \frac{n(n-2)(n+2)}{n+2} = n(n-2) \Rightarrow n^2 - 2n = 1$$

۸ (۲)



$-2 \leftarrow$

$$c=1$$

$$b, a \leftarrow 4, -2$$

$$f\left(\frac{a+b}{2c}\right) \Rightarrow f\left(\frac{1}{-2}\right) \rightarrow f(-1)$$

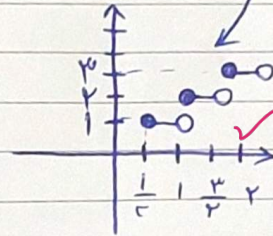
$$n^2 - 2n = 3$$

A

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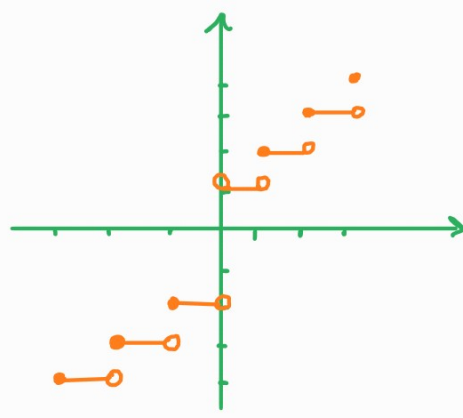
sol: $[-9, 12]$

✓ $\frac{1}{2} \times 10^3$ (1)



$$y = \begin{cases} [x] + 1 & x > 0 \\ [x] - 1 & x < 0 \end{cases}$$

$\Rightarrow$



۲-

۹- چون عدد ثابت عبارت زیر را داریم، ۸- است پس حتماً $(x-2)^3$ بوده و داریم:

$$y = \sqrt[3]{x^3 - 4x^2 + 12x - 8} \rightarrow a = -4, b = 12 \rightarrow D_y = [-4, 12]$$

$$x = -4 \rightarrow y = -8$$

$$x = 12 \rightarrow y = 10$$

$$\rightarrow R_y = [-8, 10]$$