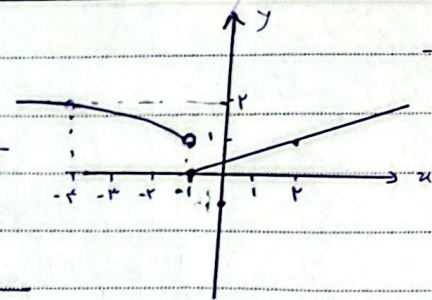


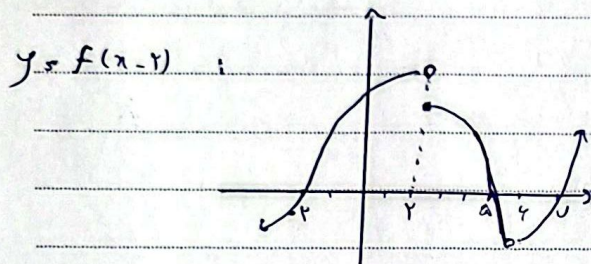
$$3y - 1 = x \rightarrow y = \frac{x+1}{3} \quad x > 0 \quad \begin{array}{c|c} y & 0 \\ \hline x & -1 \end{array} \quad \begin{array}{c|c} 1 \\ \hline 2 \end{array}$$

$$-y^2 = x \rightarrow y^2 = -x \rightarrow y = \pm \sqrt{-x} \quad \begin{array}{c|c} y & 1 \\ \hline \sqrt{-x} & 1 \end{array} \rightarrow y = +\sqrt{-x}$$



جواب: ابتدا شکل چون فرقی مداری عدد y به بار یک تنه
تغییر می کند پس تابع هست.

$$\begin{array}{c|c} y & 1 \\ \hline x & -1 \end{array} \quad \begin{array}{c|c} 2 \\ \hline -4 \end{array}$$



$$(-\infty, -4] \left\{ \begin{array}{l} f(x) \leq 0 \\ f(x-2) < 0 \\ x < 0 \end{array} \right. \rightarrow \text{غیر قابل قبول}$$

$$[-4, -2] \left\{ \begin{array}{l} f(x) \leq 0 \\ f(x-2) < 0 \\ x < 0 \end{array} \right. \rightarrow \text{قابل قبول}$$

$$(4, 5] \left\{ \begin{array}{l} f(x) > 0 \\ f(x-2) \leq 0 \\ x > 0 \end{array} \right. \rightarrow \text{غیر قابل قبول} \quad (-2, 0) \left\{ \begin{array}{l} f(x) > 0 \\ f(x-2) > 0 \\ x < 0 \end{array} \right. \rightarrow \text{غیر قابل قبول}$$

$$[0, 2] \left\{ \begin{array}{l} f(x) > 0 \\ f(x-2) > 0 \\ x > 0 \end{array} \right. \rightarrow \text{قابل قبول}$$

$$[5, +\infty) \left\{ \begin{array}{l} f(x) > 0 \\ f(x-2) > 0 \\ x > 0 \end{array} \right. \rightarrow \text{قابل قبول}$$

$$[2, 3] \left\{ \begin{array}{l} f(x) > 0 \\ f(x-2) > 0 \\ x > 0 \end{array} \right. \rightarrow \text{قابل قبول}$$

$$D = (-4, -2] \cup [0, 3] \cup [5, +\infty)$$

$$[3, 4) \left\{ \begin{array}{l} f(x) \leq 0 \\ f(x-2) > 0 \\ x > 0 \end{array} \right. \rightarrow \text{غیر قابل قبول}$$

$$(-4, 0) \left\{ \begin{array}{l} f(x) < 0 \\ f(x-2) > 0 \\ x > 0 \end{array} \right. \rightarrow \text{غیر قابل قبول}$$

$$(4, 5) \left\{ \begin{array}{l} f(x) > 0 \\ f(x-2) < 0 \\ x > 0 \end{array} \right. \rightarrow \text{غیر قابل قبول}$$

$$n^3 - 4n = n(n^2 - 4) = n(n+2)(n-2) \quad D = \mathbb{R} - \{-2, 0, 2\} \quad 3 - \text{الف}$$

ضرب
عبارت سه ضلع
دوار مثبت است

$$2n^2 - 4n + 2 \rightarrow \Delta = b^2 - 4ac = 9 - 4(2)(2) = 9 - 16 = -7 < 0$$

میانگین

$$D = (-2, 0) \cup (2, +\infty)$$

$$\text{الف)} \quad y = \sqrt{\frac{(x-2)}{(x^2-4)(x^2+2)}} = \sqrt{\frac{(x-2)}{(x+2)(x-2)(x^2+2)}} \quad \frac{-}{-} \frac{+}{+} \frac{+}{+}$$

$$x^2 \geq 0 \rightarrow x^2 + 2 > 0 \quad D = (-2, 2) \cup (2, +\infty) \quad 4$$

$$\text{ب)} \quad 4 - 2[-n] \neq 0 \rightarrow 4 \neq 2[-n] \rightarrow [-n] \neq 2$$

$$2 < -n < 3 \rightarrow -3 < n < -2 \rightarrow D = \mathbb{R} - (-3, 2)$$

$$\text{الف)} \quad \sqrt{n(n+1)(n-1)} \quad \frac{-}{-} \frac{+}{+} \frac{+}{+} \quad D = [-1, 0] \cup [1, +\infty) \quad 5$$

$$\sqrt{|n|+n} \quad D = [0, +\infty) \rightarrow \text{نایه منفی مندرج}$$

$$D \cap II = [1, +\infty)$$

$$\text{ب)} \quad x > 2 \rightarrow x - 2 - x^2 > 0 \rightarrow -(x^2 - x + 2) > 0 \quad \frac{b^2 - 4ac}{1 - 1 = -4 < 0} \rightarrow \text{عبارت سه ضلع منفرجه}$$

$$\text{①} \quad x < 2 \rightarrow -x + 2 - x^2 > 0 \rightarrow -(x^2 + x - 2) > 0 \rightarrow -(x-1)(x+2) > 0$$

$$1 \text{ و } 2 : D = [-2, 1] \quad 12$$

$$\text{②} \quad \frac{-}{-} \frac{+}{+} \frac{+}{+} \quad D = [-2, -1) \cup (-1, 1)$$

$$|x-1| \neq 0 \rightarrow |x| \neq 1 \rightarrow x \neq \pm 1 \quad (II)$$

$$\text{الف)} \quad n^2 = 0 \rightarrow n = 0 \quad [n-2] \geq 0 \rightarrow 0 \leq n-2 < 1 \rightarrow 2 \leq n < 3 \quad 7$$

$$D = \mathbb{R}$$

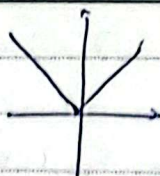
$$\text{ب)} \quad |n-1| = 0 \rightarrow n = 1 \quad [n-3] = 0 \rightarrow 0 \leq n-3 < 1 \rightarrow 3 \leq n < 4$$

$$D = [3, +\infty) \cup \{1\}$$

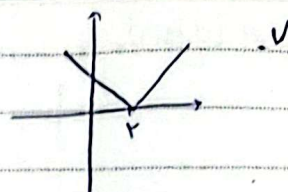
Arman

$$y = ||x-2|-1|$$

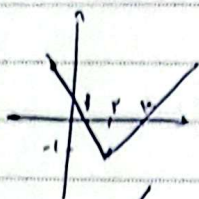
$$y = |x|$$



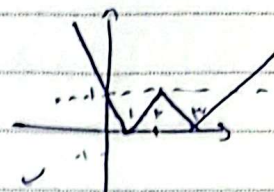
$$y = |x-2|$$



$$y = |x-2|-1$$



$$y = ||x-2|-1|$$



$$||x-2|-1| \cdot k \neq 0$$

$$||x-2|-1| \neq k \rightarrow k \leq 1$$

$$\frac{n+1}{n-1} \neq 0 \rightarrow n \neq -1$$

$$\rightarrow n-1 \neq 0 \rightarrow n \neq 1$$

$$\frac{n^2 + 3n + 2}{(n+1)(n+2)} \neq 0 \rightarrow n \neq -1, -2$$

$$D = R = \{-2, -1, 1\} \rightarrow n = 3$$

$$x^2 - 2nx + 3n = 0 \rightarrow x^2 - 2(3)x + 3(3) = 0$$

$$x^2 - 6x + 9 = 0 \rightarrow (x-3)^2 = 0 \rightarrow x = 3$$

نکات: یک ریشه مضاعف دارد.

$$\log_2 \frac{1}{x} > 0 \rightarrow 0 < x < 1 \quad (I)$$

$$n+1 > 0 \rightarrow n > -1 \quad (II)$$

$$n+1 \neq 1 \rightarrow n \neq 0 \quad (III)$$

$$D = I \cap II \cap III = (0, 1)$$

$$-0.5 \leq x \leq 3 \rightarrow 0 \leq x^2 \leq 9 \Rightarrow -1.5 \leq x^2 \leq 9 \rightarrow -1 \leq x^2 - 1 \leq 9 \rightarrow 1$$

$$D = [-1, 9]$$