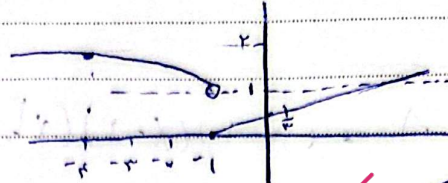


سوال ۱:

$$X = \begin{cases} \sqrt{y-1} & y \geq 0 \\ -y^2 & y > 1 \end{cases}$$



(۲)

$$n = y - 1 \Rightarrow y = n + 1$$

$$n = -1 \Rightarrow y = 0$$

$$n = -y^2$$

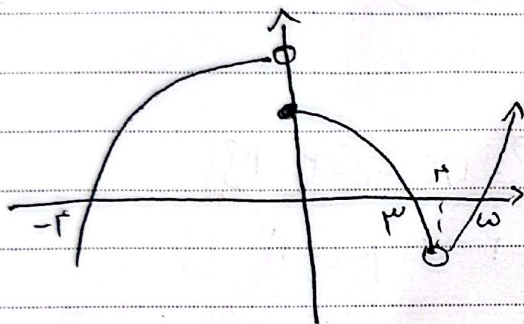
$$n = 0 \Rightarrow y = 1$$

$$2) y = \pm \sqrt{-n}$$

$$y > 1 \rightarrow y = \sqrt{-n}$$

بارتو به شکل دو پرده ضابطه می

تابع است

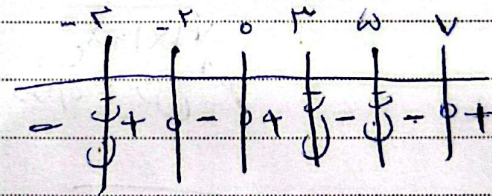
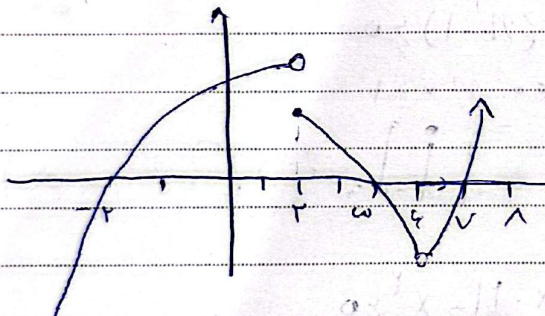


$$g(x) = \sqrt{\frac{x f(x-2)}{f(x)}}$$

سوال ۲:

(۲)

$$\frac{x f(x-2)}{f(x)} \geq 0$$



$$D_g = (-1, 2] \cup [0, 3) \cup [7, +\infty)$$

فقط صورت باشد نه $x=4$ در دامنه $f(x)$ و $x=2$ در دامنه $f(x-2)$ نیست در نتیجه فقط صورت

سوال ۳:

$$f(x) = \frac{2x^2 - 3x + 2}{x^2 - 4x}$$

$$D = \mathbb{R} - \{0, 2, 4\}$$

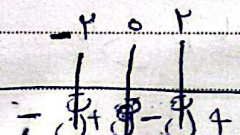
(الف) (۲)

$$x(x-2)(x+2) \neq 0 \Rightarrow x \neq 0$$

$$x \neq 2$$

$$x \neq -2$$

$$\frac{2x^2 - 3x + 2}{x^2 - 4x} \geq 0$$



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

سوال ۲

$$y = \sqrt{\frac{x-2}{x^2-2x-1}} = (x-2)(x+2)(x^2+2)$$

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

$$\begin{array}{r} x^2-2x-1 \mid x-2 \\ -x^2+2x+1 \\ \hline 3x-1 \end{array} \quad \begin{array}{r} x^2+2x+2 \mid x+2 \\ -x^2-2x-2 \\ \hline 0 \end{array}$$

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

$$D = \mathbb{R} - \{-1, 2\}$$

$$2 < x < 3 \rightarrow 2x - x^2 - 2 \neq 0 \quad x \neq (-1, 2)$$

$$الف) f(x) = \sqrt{x(x^2-1)} \quad n(n^2-1) \geq 0$$

$$\sqrt{|x|+x} \quad x \geq 0 \quad x = \pm 1$$

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

$$ب) f(x) = \sqrt{|x-2|-x^2} \quad |x-2|-x^2 \geq 0$$

$$\begin{array}{r} x \geq 2 \rightarrow x-2-x^2 \\ x < 2 \rightarrow 2-x-x^2 \\ \hline -x^2-x+2 \end{array}$$

$$D = [1, 2] - \{1\}$$

$$الف) y = \sqrt{(x-2)[x-3]} \quad (x-2)[x-3] \geq 0$$

$$D = \mathbb{R}$$

$$ب) y = \sqrt{|x-1|[x-3]}$$

$$D = \mathbb{R} - \{1\}$$

$$|n-1|[n-3] \geq 0 \rightarrow [n-3] \geq 0 \rightarrow [n] \geq 3 \rightarrow n \geq 3$$

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

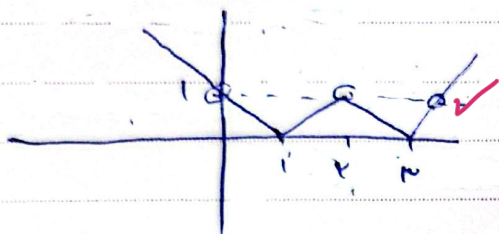
$$y = \frac{1}{|x-2|-1-k} \neq 0$$

$$\begin{array}{c|c} x < 2 & x \geq 2 \\ \hline 1-x+2-1-k & |x-2|-1-k \end{array}$$

سوال 5

(r)

$$\begin{array}{c|c} x < 1 & x \geq 1 \\ \hline -x+1-k & +x-1-k \end{array}$$



$$\begin{array}{c|c} x < 3 & x \geq 3 \\ \hline -x+3-k & x-3-k \end{array}$$

$$k \geq 1$$

$$f(x) = \frac{x^2 + 3x + 2}{x^2 + 3x + 2} \neq 0 \rightarrow (x+1)(x+2) \neq 0$$

$$\frac{x+1}{x-1} \neq 0 \quad x \neq -1$$

سوال 1

(r)

$$x \neq -1$$

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

$$x^2 - 4x + 9 = 0 \rightarrow (x-3)^2 = 0 \rightarrow x = 3$$

$$y = \log_{x+1} \left(\log_{x+2} \frac{1}{x} \right)$$

$$\log_{x+2} \frac{1}{x} > 0$$

(r)

سوال 4

$$\begin{array}{ll} n+1 > 0 & n+1 \neq 1 \\ n > -1 & n \neq 0 \end{array}$$

$$n > 0 \quad n \neq 1 \rightarrow 0 < x < 1 \rightarrow \frac{1}{x} < 1$$

$$D = (0, 1)$$

$$f(x) \rightarrow D = [-\omega, \pi]$$

سوال 5

$$-\omega \leq x \leq \pi$$

$$-\omega \leq x \leq \pi \rightarrow x \leq \pi$$

(r)

$$-\omega \leq x \leq \pi \rightarrow -\pi \leq x \leq \pi$$

$$x \leq \frac{\pi}{2}$$

$$-\frac{\pi}{\sqrt{3}} \leq x \leq \frac{\pi}{\sqrt{3}}$$

$$D = \left[-\frac{\pi}{\sqrt{3}}, \frac{\pi}{\sqrt{3}} \right]$$

Arman