

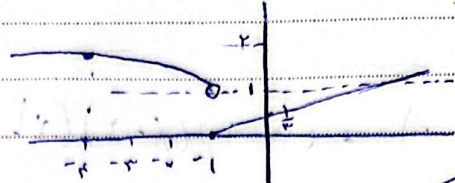
B 090

آرام شریفی

تالیف ۲

سوال ۱

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



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

$$n \geq -1 \quad y = 0$$

$$n = -y^2$$

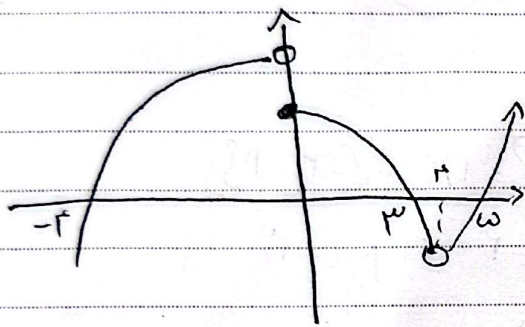
$$n = 0 \quad y = \frac{1}{2}$$

$$\Rightarrow y = \pm \sqrt{-n}$$

$$\text{موجب} \rightarrow y > 1$$

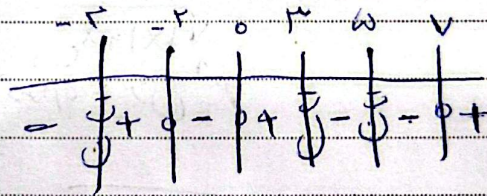
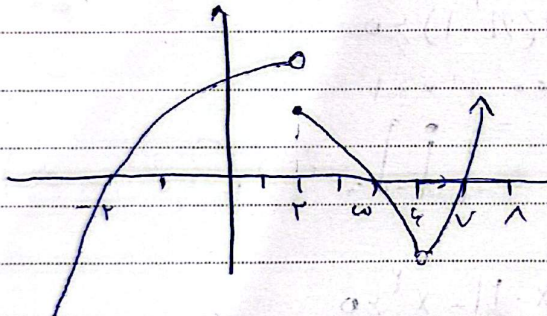
بارتو به شکل دو پرده ضایع می

تابع است



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

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



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

سوال ۳

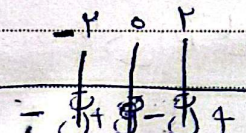
$$f(x) = \frac{2x^2 - 3x + 2}{x^2 - 4x}$$

$$D = \mathbb{R} - \{0, 2, -1\}$$

(الف)

$$x(x-2)(x+2) \neq 0 \quad \begin{aligned} x &\neq 0 \\ x &\neq 2 \\ x &\neq -2 \end{aligned}$$

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



$$D = (-2, 0) \cup (1, +\infty)$$

Arman

سوال ٣

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

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

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

$$y = \frac{2x^2+1}{x^2-2x-1} \quad x \neq 2[-x] \quad D = \mathbb{R} - (-2, -1]$$

$$2 \leq x < 3 \rightarrow 2x - x^2 - 2 \quad x \neq (-3, -2]$$

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

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

$$y = \sqrt{(x-2)[x-2]} \quad (n-2)[x-2] \geq 0 \quad D = \mathbb{R}$$

$$y = \sqrt{|x-1|[x-3]} \quad D = \mathbb{R} - (1, 3)$$

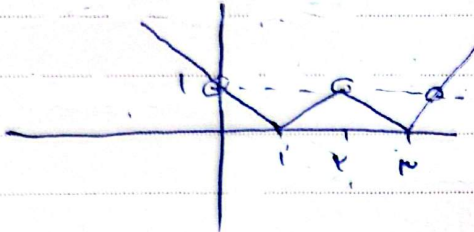
Arman

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

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

سوال ٧

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



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

$$k \geq 1$$

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

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

سوال ٨

$$x \neq -1$$

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

$$x^2 - 4x + 9 = 0 \rightarrow (x-3)^2 = 0 \quad \boxed{x = 3} \text{ (تكرار)}$$

$$y = \log_{x+1} \left(\log_{x+2} \frac{1}{x} \right) \quad \log_{x+2} \frac{1}{x} > 0$$

$$\begin{array}{l} n+1 > 0 \quad n+1 \neq 1 \\ n > -1 \quad n \neq 0 \end{array} \rightarrow n > 0 \quad n \neq 1 \rightarrow 0 < x < 1 \rightarrow \frac{1}{x} < 1$$

$$D = (0, 1)$$

سوال ٩

$$f(x) \rightarrow D = [-\omega, 3]$$

سوال ١٥

$$-\omega \leq 3x^2 - 1 \leq 3 \rightarrow 3x^2 - 1 \leq 3 \rightarrow 3x^2 \leq 4 \rightarrow x^2 \leq \frac{4}{3}$$

$$-\omega \leq 3x^2 - 1 \rightarrow -\omega + 1 \leq 3x^2 \rightarrow x^2 \geq \frac{-\omega + 1}{3}$$

$$-\frac{\sqrt{-\omega + 1}}{\sqrt{3}} \leq x \leq \frac{\sqrt{-\omega + 1}}{\sqrt{3}}$$

$$D = \left[-\frac{\sqrt{-\omega + 1}}{\sqrt{3}}, \frac{\sqrt{-\omega + 1}}{\sqrt{3}} \right]$$

Arman