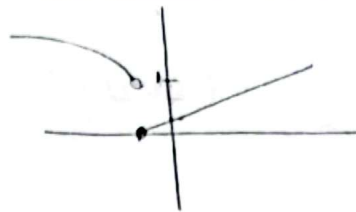


$$\lambda = \begin{cases} \sqrt[3]{y} - 1 & y \geq 0 \\ -y^2 & y > 1 \end{cases} \rightarrow y = \frac{\lambda+1}{\sqrt[3]{\lambda}} \rightarrow y = \sqrt{-\lambda}$$

عقود یکنواخت



$$* \frac{\lambda+1}{\sqrt[3]{\lambda}} \geq 0 \rightarrow \lambda+1 \geq 0 \rightarrow \lambda \geq -1$$

$$* \sqrt{-\lambda} > 1 \rightarrow -\lambda > 1 \rightarrow \lambda < -1$$

(1)

	-4	-2	0	2	4	6	7
λ	-	-	0	+	+	+	+
$Q(\lambda-2)$	-	-	0	+	+	0	-
$Q(\lambda)$	-	+	+	+	0	0	+
	-	+	+	+	0	0	+

$\lambda \in (-2, 5) \cup [7, +\infty)$

$$\frac{Q(\lambda-2)}{Q(\lambda)} \geq 0$$

$$D_Q = (-4, -2] \cup [0, 2) \cup [7, +\infty)$$

(2)

الف) $\lambda(\lambda-2)(\lambda+2) \neq 0 \rightarrow \lambda \neq 0, 2, -2 \rightarrow \mathbb{R} - \{0, 2, -2\} = D_Q$

ب) $Q(\lambda) \geq 0 \rightarrow \frac{\lambda^3 - 3\lambda + 2}{\lambda^3 - 4\lambda} \rightarrow \Delta < 0 \rightarrow + \text{و} -$

$$\rightarrow \frac{-2 \cdot 2}{-2+2-2} + \rightarrow D_Q = (-2, 0) \cup (2, +\infty)$$

(3)

الف) $y = \sqrt{\frac{\lambda-2}{\lambda^2-2\lambda-1}}$

$$\epsilon > 0 \rightarrow (\lambda^2-2)(\lambda^2+2) > 0 \rightarrow \lambda = \pm 2$$

$$\rightarrow \frac{-2}{-2+2-2} + \rightarrow D_Q = (-2, 2) \cup (2, +\infty)$$

ب) $y = \frac{2\lambda^2+1}{4-2[-\lambda]}$

$$\rightarrow 4-2[-\lambda] \neq 0 \rightarrow [-\lambda] \neq 2 \rightarrow 2 \leq -\lambda \leq 4$$

$$\rightarrow -4 \leq \lambda \leq -2 \rightarrow D_Q = \mathbb{R} - [-4, -2]$$

(4)

الف) $Q(\lambda) = \sqrt{\lambda(\lambda^2-1)}$

$$\lambda(\lambda-1)(\lambda+1) \geq 0$$

$$\left. \begin{matrix} -1 & 0 & 1 \\ - & + & - & + \end{matrix} \right\} \rightarrow [1, +\infty)$$

$$\sqrt{|\lambda|+2} \rightarrow \lambda \in (0, +\infty)$$

ب) $Q(\lambda) = \sqrt{|\lambda-1|-2\lambda^2}$

$$\lambda \neq \pm 1 \quad |\lambda-1|-2\lambda^2 \geq 0 \rightarrow$$

$$\rightarrow \begin{cases} \lambda > 1 & -2\lambda^2 + \lambda - 1 \Delta < 0 \rightarrow - \end{cases}$$

$$\begin{cases} \lambda < 1 & -\lambda^2 - \lambda + 2 = -(\lambda+2)(\lambda-1) \rightarrow \frac{-2}{-2+2-2} + \rightarrow D_Q = [-2, 1) \cup \{1\} \end{cases}$$

(5)

الف) $y = \sqrt{(\lambda-2)[\lambda-2]}$

$$\frac{2}{2} \cdot \frac{2}{2} \cdot \frac{2}{2} + \rightarrow D_Q = \mathbb{R}$$

ب) $y = \sqrt{|\lambda-1|[\lambda-2]}$

$$\frac{1}{1} \cdot \frac{2}{2} \cdot \frac{2}{2} + \rightarrow D_Q = [2, +\infty) \cup \{1\}$$

(6)

$$y = \frac{1}{| |x-1| - 1 | - k} \Rightarrow \underbrace{| |x-1| - 1 |}_{\neq k} - k \neq 0$$



$0 < k < 1 \rightarrow \text{دو تکیه}$
 $k = 1 \rightarrow \text{دو تکیه}$
 $k > 1 \rightarrow \text{دو تکیه}$

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$$f(n) = \frac{n^r + r n + r}{n^r + r n + r} \quad n \neq 1, -1, -r \rightarrow n = r \neq$$

$$\frac{n+1}{n-1} \quad n^r + r n + r \neq 0 \rightarrow (n+1)(n+r) \neq 0$$

$$n^r - 4n + 9 = 0 \rightarrow (n-3)^2 = 0 \rightarrow n = 3 \quad \text{یک تکیه}$$

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$$y = \log \log \frac{1}{n+1} \quad n \neq 0 \quad n > -1 \quad \log \frac{1}{n} > 0 \rightarrow -1 < n < 1$$

$$D_h = (0, 1)$$

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$$h(x^{2r-1})$$

$$D_h(w) = [-\infty, \infty] \xrightarrow{+1} [-r, r] \xrightarrow{x^{\frac{1}{2}}} \left[-\frac{r}{\sqrt{r}}, \frac{r}{\sqrt{r}}\right] \xrightarrow{\sqrt{\cdot}} \left[-\frac{r}{\sqrt{r}}, \frac{r}{\sqrt{r}}\right]$$

$$\rightarrow \left[-\frac{r\sqrt{r}}{r}, \frac{r\sqrt{r}}{r}\right]$$

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