

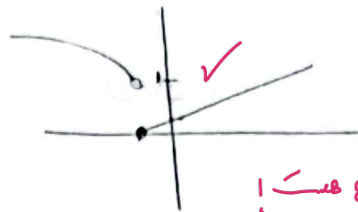
19, 5

حسنتی مهدی - تکلیف شماره 2 - دراز دهم رشته B

$$\lambda = \begin{cases} \lambda^2 y - 1 & y \geq 0 \\ -y^2 & y < 0 \end{cases} \rightarrow y = \frac{\lambda+1}{\lambda^2}$$

$$\rightarrow y = \sqrt{-\lambda}$$

عقده های دلتا



$$* \frac{\lambda+1}{\lambda^2} \geq 0 \rightarrow \lambda+1 \geq 0 \rightarrow \lambda \geq -1$$

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

(1) (1.5/4)

λ	-4	-2	0	2	4	6	8
$Q(\lambda-2)$	-	-	0	+	+	+	+
$Q(\lambda)$	-	+	+	+	0	+	+
	-	+	+	+	0	+	+

-2, 5 و 7

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

$$D_g = (-4, -2] \cup [0, 2)$$

$$\cup [7, +\infty)$$

نقطه صفر باشد که $x=4$ در دامنه است و $x=2$ در دامنه نیست (چون $x=2$ در دامنه نیست و $x=4$ در دامنه است)

(2) (2)

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

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

$$\rightarrow \frac{-2 \pm \sqrt{4-8}}{-3 \pm \sqrt{9-4}} + \rightarrow D_h = (-2, 0) \cup (2, +\infty)$$

(3) (2)

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

$$\Delta \geq 0 \rightarrow (\lambda^2 - 4)(\lambda^2 + 2) \geq 0 \rightarrow \lambda = \pm 2$$

$$\rightarrow \frac{-2 \pm \sqrt{4-8}}{-3 \pm \sqrt{9-4}} + \rightarrow D_h = (-2, 2) \cup (2, +\infty)$$

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

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

$$\rightarrow -4 < \lambda < -2 \rightarrow D_h = \mathbb{R} - (-4, -2)$$

(4) (1.5/4)

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

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

$$\left[\frac{-1}{-1} + \frac{0}{0} - \frac{1}{-1} + \frac{1}{1} \right] \rightarrow [1, +\infty)$$

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

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

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

$$\rightarrow \begin{cases} \lambda > 1 & -\lambda^2 + \lambda - 1 \Delta < 0 \rightarrow -1/4 \end{cases}$$

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

(5) (2)

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

$$\frac{2}{-1} + \frac{3}{0} + \frac{4}{0} + \rightarrow D_h = \mathbb{R}$$

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

$$\frac{1}{-1} - \frac{3}{0} + \frac{4}{0} + \rightarrow D_h = [2, +\infty) \cup \{1\}$$

(6) (2)

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



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

(18)

$$f(n) = \frac{n^2 + 3n + 2}{n^2 + 3n + 2} \cdot \frac{n+1}{n-1}$$

$n \neq 1, -1, -2 \rightarrow n=3$ ✓

$n^2 + 3n + 2 \neq 0 \rightarrow (n+1)(n+2) \neq 0$

$$n^2 - 4n + 4 = 0 \rightarrow (n-2)^2 = 0 \rightarrow n=2$$
 ✓

(19)

$$y = \log_{n+1} \log_{\frac{1}{n}}$$

$n \neq 0$
 $n > 0$

$n > -1$

$\log_{\frac{1}{n}} > 0 \rightarrow 0 < n < 1$ ✓

$$D_h = (0, 1)$$

(20)

$$h(3n^2-1)$$

$$D_h(n) = [-5, 5] \xrightarrow{+1} [-4, 6] \xrightarrow{\times \frac{1}{2}} \left[-\frac{4}{2}, \frac{6}{2}\right] \xrightarrow{\sqrt{}} \left[-\frac{4}{\sqrt{2}}, \frac{6}{\sqrt{2}}\right]$$

$$\rightarrow \left[-\frac{4\sqrt{2}}{2}, \frac{6\sqrt{2}}{2}\right] \checkmark$$

(21)