

پاسخ منفی

۱۴، ۲۵

الف) $y = \sqrt{\frac{m^2 - 4m}{m^3 - m}}$ ب) $y = \sqrt{\frac{m^2 - m^2}{m^3 - m}} \rightarrow \frac{m^2 - m^2}{m^3 - m} \geq 0$

$\sqrt{\frac{m^2(m-4)}{m^2(m-1)}} \rightarrow \frac{m^2(m-4)}{m^2(m-1)} \geq 0$

$\frac{m-4}{m-1} \geq 0$ جدول نیش علامت؟

$m-4 \geq 0 \rightarrow m \geq 4$ $m-1 > 0 \rightarrow m > 1$

$m-4 \leq 0 \rightarrow m \leq 4$ $m-1 < 0 \rightarrow m < 1$

$m \geq 4$ $m < 1$

$P_D = (-1, 0) \cup (0, 1) \cup [4, +\infty)$ $P_D = (0, 1) \cup (1, +\infty)$

الف) $y = \frac{m+1}{\sqrt{m+|m|}}$

$m+|m| > 0$ X Df: (0, +\infty)

$|m| \geq -m$ X Df: (0, +\infty)

$m+|m| \geq 2m \rightarrow m \geq 0$ Df: (0, +\infty)

ب) $y = \frac{1}{\sqrt{m|m|}}$

$m|m| > 0$ Df: (0, +\infty)

$m|m| \geq m^2 > 0$ Df: (0, +\infty)

الف) $y = \sqrt{2-|m|}$

$2-|m| \geq 0$ Df: (-\infty, 2)

$|m| \leq 2$ Df: (-\infty, 2)

$m < 2$ Df: (-\infty, 2)

ب) $y = \frac{1}{\sqrt{2-|m|}}$

$2-|m| > 0$ Df: (-\infty, 2)

$|m| < 2$ Df: (-\infty, 2)

الف) $y = \sqrt{\left[m - \frac{1}{r}\right] + \left[m + \frac{1}{r}\right]}$

$\left[m - \frac{1}{r}\right] + \left[m + \frac{1}{r}\right] \geq 0$ Df: \left[\frac{1}{r}, +\infty\right)

$\frac{1}{r} \leq m < 1$ Df: \left[\frac{1}{r}, +\infty\right)

$P_D = \left[\frac{1}{r}, +\infty\right)$ Df: \left[\frac{1}{r}, +\infty\right)

ب) $y = \sqrt{\left[m - \frac{1}{r}\right] + \left[-m + \frac{1}{r}\right]}$

$a = m - \frac{1}{r}$ Df: \left\{\frac{1}{r} + k \mid k \in \mathbb{Z}\right\}

$\{a\} + \{-a\} \geq 0$ Df: \left\{\frac{1}{r} + k \mid k \in \mathbb{Z}\right\}

$m = \frac{1}{r} + k$ Df: \left\{\frac{1}{r} + k \mid k \in \mathbb{Z}\right\}

الف) $y = \frac{r}{\sin m - 1}$

$\sin m - 1 \neq 0$ Df: \mathbb{R} - \left\{\frac{\pi}{r} + k\pi\right\}

$\sin m \neq 1$ Df: \mathbb{R} - \left\{\frac{\pi}{r} + k\pi\right\}

$P_D = \mathbb{R} - \left\{\frac{\pi}{r} + k\pi\right\}$ Df: \mathbb{R} - \left\{\frac{\pi}{r} + k\pi\right\}

ب) $y = \frac{r}{r \sin^2 m - 1}$

$r \sin^2 m - 1 \neq 0$ Df: \mathbb{R} - \left\{\frac{\pi}{r} + k\pi\right\}

$\sin^2 m \neq \frac{1}{r}$ Df: \mathbb{R} - \left\{\frac{\pi}{r} + k\pi\right\}

$\sin m \neq \pm \sqrt{\frac{1}{r}}$ Df: \mathbb{R} - \left\{\frac{\pi}{r} + k\pi\right\}

$$الف) y = \sqrt{r \sin m - 1}$$

$$r \sin m - 1 \geq 0$$

$$\sin m \geq \frac{1}{r}$$

1, 7b

$$D_f = \left[\frac{\pi}{4} + 2k\pi, \frac{\pi}{4} + 2k\pi \right]$$

$$ب) y = \sqrt{\cos m - 1}$$

$$\cos m - 1 \geq 0$$

$$\cos m \geq 1$$

$$\cos m = 1$$

$$D_f = \{2k\pi\}$$

$$الف) \cos y = |m| - 2$$

$$[-1, 1]$$

$$-1 \leq |m| - 2 \leq 1$$

$$-1 \leq |m| \leq 3$$

$$D_f = [-3, -1] \cup [1, 3]$$

$$ب) y = \arcsin(m^2 + 2m + 1)$$

1, 7b

$$-1 \leq m^2 + 2m + 1 \leq 1$$

$$m^2 + 2m + 2 \geq 0 \rightarrow m \leq -2$$

$$(m+1)(m+3) \geq 0 \rightarrow m \geq -1$$

$$\rightarrow -3 \leq m \leq -1$$

$$D_f = [-3, -1] \cup [-1, 0]$$

$$الف) y = \sqrt{r \log_r(m-r)}$$

$$m-r > 0$$

$$m > 0$$

$$m-r \leq r$$

$$m \leq 2r \rightarrow D_f = (r, 2r]$$

$$ب) y = \log(m^3 - m)$$

7b

$$m^3 - m > 0$$

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

$$m(m-1)(m+1) > 0$$

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

$$الف) y = \frac{r}{\varepsilon^m + 1}$$

$$\varepsilon^m > 0$$

$$\varepsilon^m + 1 > 0$$

$$D_f = \mathbb{R}$$

$$ب) y = \frac{r}{\varepsilon^m - 1}$$

$$\varepsilon^m - 1 \neq 0$$

$$\varepsilon^m \neq 1$$

$$m \neq \log_r \varepsilon = \frac{1}{r}$$

$$D_f = \mathbb{R} - \left\{ \frac{1}{r} \right\}$$

$$الف) y = (\varepsilon m + 1)!$$

$$\varepsilon m + 1 \in \mathbb{N}$$

$$D_f = \left\{ \frac{n-1}{\varepsilon} \mid n \in \mathbb{Z}_{\geq 0} \right\}$$

$$D_g = \left\{ n \mid n = \frac{k-1}{\varepsilon}, k \in \mathbb{W} \right\}$$

$$ب) y = \left(\frac{\varepsilon m - r}{\varepsilon m - 1} \right)!$$

$$\frac{\varepsilon m - r}{\varepsilon m - 1} \in \mathbb{N}$$

$$D_f = \left\{ \frac{\delta n - r}{\varepsilon(n-1)} \mid n \in \mathbb{Z}_{\geq 0}, n \neq 1 \right\}$$

$$n \in \frac{-\delta \mathbb{W} + r}{\varepsilon - \delta \mathbb{W}}$$

$$D_g = \left\{ n \mid n = \frac{-\delta k + r}{\varepsilon - \delta k}, k \in \mathbb{W} \right\}$$

١- الف

$$\frac{x(x-4)}{x(x^2-1)} \geq 0 \rightarrow \begin{array}{c} -1 \quad 0 \quad 1 \quad 4 \\ \hline - \quad + \quad + \quad - \quad + \end{array}$$

ب

$$\frac{x^2(x^2-1)}{x(x^2-1)} \geq 0 \rightarrow \begin{array}{c} * -1 \quad * 0 \quad * 1 \\ \hline + \quad + \quad + \quad + \end{array}$$

$$D_f = \mathbb{R} - \{-1, 0, 1\}$$

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$$\begin{aligned} \left[x - \frac{1}{x}\right] + \left[x + \frac{x}{x}\right] &\geq 0 \rightarrow \left[x - \frac{1}{x} + 1\right] + \left[x + \frac{x}{x}\right] \geq 1 \\ \rightarrow 2 \left[x + \frac{x}{x}\right] &\geq 1 \rightarrow \left[x + \frac{x}{x}\right] \geq \frac{1}{2} \rightarrow x + \frac{x}{x} \geq 1 \\ \rightarrow x &\geq \frac{1}{x} \Rightarrow D_f = \left[\frac{1}{x}, +\infty\right) \end{aligned}$$

٣-

$$\begin{aligned} (x+1)(x+2) &\geq 0 \rightarrow \begin{array}{c} -2 \quad -1 \\ \hline + \quad - \quad + \end{array} \\ x(x+3) &\leq 0 \rightarrow \begin{array}{c} -3 \quad 0 \\ \hline + \quad - \quad + \end{array} \end{aligned} \rightarrow D_f = [-3, -2] \cup [-1, 0]$$