

تکلیف شماره 4 - کلاس جمع ۳۰٪ الی ۱۸۰٪ گروه A

الناسفاني

$$y = \sqrt{\frac{n^2 - 4n}{n^3 - n}} \quad \frac{n^2 - 4n}{n^3 - n} \geq 0 \quad \frac{n(n-4)}{n(n^2 - n)} = \frac{n^0(n-4)}{n^{-1}(n+1)(n-1)} \geq 0$$

$$y = \sqrt{\frac{n}{-1} + \frac{-1}{0} + \frac{0}{1} + \frac{1}{4}} \quad D_f = (-1, 0) \cup (0, 1) \cup [4, +\infty)$$

$$y = \sqrt{\frac{n^3 - n^2}{n^3 - n}} \quad \frac{n^3 - n^2}{n^3 - n} \geq 0 \quad \frac{n^3(n+1)(n-1)}{n(n^2 - n)} \geq 0$$

$$y = \sqrt{\frac{n}{1} + \frac{1}{0} + \frac{0}{1} + \frac{1}{1}} \quad D_f = \mathbb{R} - \{1, 0, -1\}$$

$$y = \frac{n+1}{\sqrt{n+|n|}} \quad n+|n| > 0 \quad + \checkmark \quad D_f = \mathbb{R}^+$$

$$y = \frac{1}{\sqrt{n|n|}} \quad n|n| > 0 \quad + \checkmark \quad D_f = \mathbb{R}^+$$

$$y = \sqrt{2 - [n]} \quad 2 - [n] \geq 0 \quad [n] \leq 2 \quad n \leq 2 \quad D_f = (-\infty, 2]$$

$$y = \frac{1}{\sqrt{2 - [n]}} \quad 2 - [n] > 0 \quad [n] < 2 \quad n < 2 \quad D_f = (-\infty, 2)$$

$$y = \sqrt{\left[n - \frac{1}{4}\right] + \left[n + \frac{1}{4}\right]} \quad \sqrt{\left[n + \frac{1}{4} - 1\right] + \left[n + \frac{1}{4}\right]} \geq 0$$

$$D_f = \left[-\frac{1}{4}, +\infty\right) \quad \left[n + \frac{1}{4}\right] - 1 + \left[n + \frac{1}{4}\right] \geq 0 \quad \boxed{n \geq -\frac{1}{4}}$$

$$2 \left[n + \frac{1}{4}\right] \geq 1 \quad n + \frac{1}{4} \geq \frac{1}{2}$$

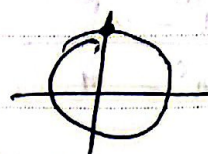
$$-.) y = \sqrt{\left[n + \frac{1}{\varepsilon}\right] + \left[-n + \frac{1}{\varepsilon}\right]} \quad \sqrt{\left[n - \frac{1}{\varepsilon}\right] + \left[-\left(n - \frac{1}{\varepsilon}\right)\right]}$$

$$\text{if } \begin{cases} a \in \mathbb{Z} & [a] + [-a] = 0 \\ a \notin \mathbb{Z} & [a] + [-a] = -1 \end{cases} \quad n = \frac{1}{\varepsilon} \in \mathbb{Z} \quad n \in \mathbb{Z} + \frac{1}{\varepsilon}$$

$$D_f = \left\{ n \mid n = k + \frac{1}{\varepsilon} \quad k \in \mathbb{Z} \right\}$$

$$\text{الف) } y = \frac{\gamma}{\sin n - 1}$$

$$\sin n - 1 \neq 0 \quad \sin n \neq 1$$



$$D_f = \mathbb{R} - \left\{ \gamma k \pi + \frac{\pi}{\varepsilon} \right\} \quad n \neq \gamma k \pi + \frac{\pi}{\varepsilon}$$

$$-.) y = \frac{\gamma}{\gamma \sin^2 n - 1}$$

$$\gamma \sin^2 n - 1 \neq 0$$

$$\gamma \sin^2 n \neq 1 \quad \sin^2 n \neq \frac{1}{\gamma}$$



$$D_f = \mathbb{R} - \left\{ \frac{k\pi}{\gamma} + \frac{\pi}{\varepsilon} \right\} \quad k \in \mathbb{Z}$$

$$\frac{k\pi}{\gamma} - \frac{\pi}{\varepsilon}$$

$$\text{الف) } y = \sqrt{\gamma \sin n - 1}$$

$$\gamma \sin n - 1 \geq 0$$

$$\gamma \sin n \geq 1 \quad \sin n \geq \frac{1}{\gamma}$$



$$D_f = \left[\gamma k \pi + \frac{\pi}{\varepsilon}, \gamma (k+1) \pi + \frac{\pi}{\varepsilon} \right]$$

$$-.) y = \sqrt{\cos n - 1}$$

$$\cos n - 1 \geq 0 \quad \cos n \geq 1$$

مقادیر یک هستند و کمتر از یک نیستند.

$$D_f = \{ \gamma k \pi \} \quad k \in \mathbb{Z} \quad \boxed{\cos n = 1}$$

$$\text{الف.) } \cos y = |n| - r \quad -1 \leq |n| - r \leq 1$$

$$r \leq |n| \leq r + 1$$

$$D_f = [x_0, \{ \} \cup [x_0 - r, -r]$$

$$r \leq n \leq r + 1$$

$$-r \leq n \leq -r - 1$$

$$\text{ب.) } y = \arcsin(n^r + rn + 1)$$

$$-1 \leq n^r + rn + 1 \leq 1$$

$$-r \leq n^r + rn \leq 0$$

$$\text{② } n^r + rn \leq 0$$

$$n(n+r) \leq 0$$

$$\frac{n}{r} \mid \frac{-r}{1} \quad \frac{0}{0}$$

$$[-r, 0]$$

$$\text{① } n^r + rn \geq -r$$

$$n^r + rn + r \geq 0$$

$$(n+1)(n+r) \geq 0$$

$$\frac{n}{r} \mid \frac{-r}{1} \quad \frac{-1}{0}$$

$$D_f = [x_0, r] \cup [-1, 0] = (-\infty, -r] \cup [-1, +\infty) \cap [x_0, 0]$$

$$\text{الف.) } y = \sqrt{r - \log_p(n-r)}$$

$$\text{① } n-r > 0$$

$$n > r$$

$$\text{② } r - \log_p(n-r) \geq 0$$

$$\log_p(n-r) \leq r$$

$$D_f = (r, 11]$$

$$r \leq n \leq 11$$

$$n-r \leq 9 \quad n \leq 11$$

$$\text{ب.) } \log(n^r - n)$$

$$n^r - n > 0$$

$$\frac{n}{r} \mid \frac{-1}{0} \quad \frac{0}{0}$$

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

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

$$\text{الف) } y = \frac{\gamma}{\varepsilon^n + 1}$$

$$\varepsilon^n + 1 \neq 0, \quad \gamma^n \neq -1$$

$$P_f = R$$

مستبعدا من المجال

$$\text{ب) } y = \frac{\gamma}{\varepsilon^n - 1}$$

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

$$\varepsilon^n \neq 1, \quad \gamma^n \neq 1, \quad n \neq 0$$

$$P_f = R - \{0\}$$

$$\text{ج) } y = \frac{\gamma}{\varepsilon^n - \gamma}$$

$$\varepsilon^n - \gamma \neq 0$$

$$\varepsilon^n \neq \gamma \rightarrow \log_\varepsilon \gamma \neq n$$

$$P_f = R - \{\log_\varepsilon \gamma\}$$

$$\text{د) } y = \frac{\gamma}{\varepsilon^n - \gamma}$$

$$\varepsilon^n - \gamma \neq 0$$

$$\varepsilon^n \neq \gamma \rightarrow \log_\varepsilon \gamma \neq n$$

$$P_f = R - \{\log_\varepsilon \gamma\}$$

$$\text{الف) } y = (\varepsilon n + 1)!$$

$$P_f = \{n \mid n = \frac{k-1}{\varepsilon}, k \in W\}$$

$$\varepsilon n + 1 \in W, \quad \varepsilon n \in W - 1, \quad n \in W - 1$$

$$P_f = \{n \mid n \in \frac{\gamma - \omega k}{\gamma - \gamma k}, k \in W\}$$

$$\text{ب) } \left(\frac{\gamma n - \gamma}{\gamma n - \omega} \right)!$$

$$\frac{\gamma n - \gamma}{\gamma n - \omega} \in W$$

$$n \in \frac{\gamma - \omega W}{\gamma - \gamma W}$$

$$\gamma n - \gamma \in \gamma W - \omega W$$

$$\gamma n - \gamma W \in \gamma - \omega W$$

$$n(\gamma - \gamma W) \in \gamma - \omega W$$