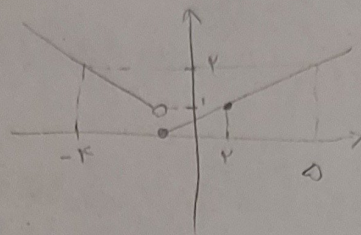


< تكليف ٢ >

< ف ط م ش ك ل >

(دوازدهم ریز ١٣)

$$n \begin{cases} 3y-1 & y \geq 0 \\ -y^2 & y < 0 \end{cases}$$



①

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

| n      | -4 | -2 | 0 | 2 | 4 | 6 |
|--------|----|----|---|---|---|---|
| n      | -  | -  | - | 0 | + | + |
| f(n)   | -  | 0  | + | + | 0 | - |
| f(n-2) | -  | -  | 0 | + | + | 0 |
|        | -  | 0  | + | 0 | - | + |

②

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

$$n^2 - f_n \neq 0$$

$$n(n-2)(n+2) \neq 0$$

(الف)

$$D_f = \mathbb{R} - \{-2, 0, 2\}$$

③

Δ < 0  
برای هر n

$$\frac{n^2 - f_n}{n^2 - f_n} \geq 0 \rightarrow \frac{-1}{0} + \frac{1}{0} + \frac{1}{0} +$$

(ب)

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

$$\frac{n-2}{n^2 - f_n - 1} \geq 0$$

$$\rightarrow (n^2 - f_n)(n^2 + 2) \rightarrow n^2 = 4 \rightarrow n = \pm 2$$

| n-2           | -4 | -2 | 0 | 2 | 4 |
|---------------|----|----|---|---|---|
| n-2           | -  | -  | - | 0 | + |
| n^2 - f_n - 1 | -  | 0  | + | + | 0 |
|               | -  | 0  | + | 0 | - |

④

$$y = \frac{f_n + 1}{f_n - 2}$$

$$f_n - 2 \neq 0$$

$$[n] \neq 2$$

$$-2 < -n < 2 \rightarrow -2 < n < 2$$

$$D_f = (-2, +\infty) - \{2\}$$

$$D_f = \mathbb{R} - \{-2, 2\}$$

$$n(n^2 - 1) \geq 0 \rightarrow$$

$$\frac{-1}{-1} + \frac{1}{1} + \frac{1}{1} +$$

$$\rightarrow [-1, 0] \cup [1, +\infty)$$

$$|n| + n > 0 \rightarrow \mathbb{R}^+ \subseteq (0, +\infty)$$

$$D_f = [1, +\infty)$$

⑤

$$|n-2| - n^2 \geq 0$$

$$\begin{cases} -n^2 + n - 2 \\ -n^2 - n + 2 \end{cases}$$

$$\begin{aligned} n \geq 2 &\rightarrow -n^2 + n - 2 \geq 0 \\ n < 2 &\rightarrow -n^2 - n + 2 \geq 0 \end{aligned}$$

Δ < 0  
α < 0  
برای هر n

$$n = 1, -2$$

$$|n| - 1 \neq 0 \rightarrow n \neq \pm 1$$

①

$$\frac{-1}{-1} + \frac{1}{1} + \frac{1}{1} +$$

①

$$\textcircled{1} \cap \textcircled{2} \rightarrow [-2, 1] - \{-1, 1\} = D_f$$

که متغیر  $\rightarrow (n-2)[n-2] \geq 0$   
 برآیند هیچ  $[n-2] \neq 0 \rightarrow 2 \leq n \leq 4$   
 وقت صفای المان نیست

$$D_f = R$$

(4)

$$|n-1| [n-2] \geq 0$$

$[2n] \neq 3$   
 $\hookrightarrow 3 \leq n \leq 4$   
 نیست

$$\begin{array}{ccccccc} & 1 & & 2 & & 3 & \\ + & 1 & - & 1 & = & 1 & + \end{array}$$

$$D_f = R - (1, 2)$$

$$||n-2|-1| - K = 0$$

$$||n-2|-1| = K \rightarrow$$

$$n-2 = 1+K$$

$$n = 1-K$$

$$\hookrightarrow 1-K=0 \rightarrow K=1$$

(5)

$$||n-2|-1| = 1 \rightarrow n = 3, 0, 2$$

$$K=1 \text{ نیست}$$

$$\left. \begin{array}{l} n^2 + 2n + 2 \neq 0 \rightarrow n \neq -2, -1 \\ n-1 \neq 0 \rightarrow n \neq 1 \\ \frac{n+1}{n-1} \neq 0 \rightarrow n \neq -1 \end{array} \right\}$$

$$D_f = R - \{-2, -1, 1\}$$

$$2 = n \text{ نیست}$$

(6)

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

$$\Rightarrow \text{بعضی } \frac{0}{0} \rightarrow n=2$$

$$\log \frac{1}{n}$$

$$\rightarrow \begin{cases} n > 0, n \neq 1 \\ n+1 > 0, n > -1, n \neq 0 \\ \log \frac{1}{n} > 0 \end{cases}$$

$$\begin{array}{l} n > 1 \rightarrow \frac{1}{n} < 1 \text{ صحیح} \\ 0 < n < 1 \rightarrow \frac{1}{n} > 1 \text{ صحیح} \end{array}$$

$$D_f = (2, 1)$$

(7)

$$-2 \leq n^2 - 1 \leq 2$$

$$-1 \leq n^2 \leq 1$$

$$-\frac{1}{n} \leq n^2 \leq \frac{1}{n} \rightarrow 0 \leq n^2 \leq \frac{1}{n}$$

$$\frac{1}{\sqrt{n}} \leq n \leq \frac{1}{\sqrt{n}} \in D_f \text{ (1.)}$$