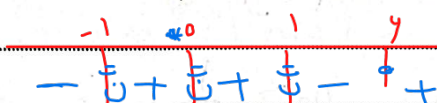


کلیه متغیرهای

11, 6

آنها را حل می‌کنیم

$$\begin{cases} x^2 - 4x > 0 \rightarrow x(x-4) > 0 \end{cases} \quad \text{ن=0} \quad \text{ن=4} \quad \text{اف} \quad \text{1}$$

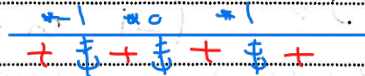


$$x \in (-\infty, 0] \cup [4, +\infty)$$

$$\begin{cases} x^3 - x \neq 0 \rightarrow x(x^2 - 1) \neq 0 \rightarrow x \neq 0, x \neq 1, x \neq -1 \end{cases}$$

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

$$\begin{cases} x^3 - x^2 > 0 \rightarrow x^2(x-1) > 0 \rightarrow x^2(x-1)(x+1) > 0 \end{cases} \quad \text{ن=0} \quad \text{ن=1} \quad \text{ن=-1} \quad \text{اف} \quad \text{2}$$

جمله مثبت
علامت مثبت

$$x = -1 \quad x = 0 \quad x = 1$$

$$x^3 - x \neq 0 \rightarrow x \neq -1, 0, 1 \quad R-f.b.o.1?$$

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

$$x + |x| > 0 \rightarrow |x| > -x \rightarrow x > 0$$

$$D_f = (0, +\infty)$$

اف 2

$$x|x| > 0 \rightarrow x > 0$$

$$D_f = (0, +\infty)$$

2 ✓

3

$$x - [x] > 0 \rightarrow [x] < x \rightarrow x < 3$$

$$D_f = (-\infty, 3)$$

اف 3

$$x - [x] > 0 \rightarrow [x] < x \rightarrow x < 3$$

$$D_f = (-\infty, 3)$$

3

$$\left[n + \frac{1}{p}\right] = \left[n - \frac{1}{p} + 1\right] = \left[n - \frac{1}{p}\right] + 1$$

(الف) (۳)

$$\left[n - \frac{1}{p}\right] + 1 + \left[n - \frac{1}{p}\right] \geq 0 \rightarrow 2\left[n - \frac{1}{p}\right] \geq -1$$

$$\left[n - \frac{1}{p}\right] \geq -\frac{1}{2} \rightarrow n - \frac{1}{p} \geq 0 \rightarrow n \geq \frac{1}{p}$$

$$D_f = \left[\frac{1}{p}, +\infty\right)$$

$$\left[n - \frac{1}{p}\right] + \left[-n + \frac{1}{p}\right] \geq 0 \quad (۲) \checkmark$$

(ب)

$$\left[n - \frac{1}{p}\right] + \left[-\left(n - \frac{1}{p}\right)\right] \geq 0 \quad \begin{cases} 0 & n - \frac{1}{p} \in \mathbb{Z} \\ -1 & n - \frac{1}{p} \notin \mathbb{Z} \end{cases}$$

$$n - \frac{1}{p} = k \rightarrow n = k + \frac{1}{p} \quad (k \in \mathbb{Z})$$

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

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

$$D_f = \mathbb{R} - \left\{ 2K\pi + \frac{\pi}{2} \right\}$$

(الف) (۵)

$$|\sin n| \neq 1 \rightarrow \sin n \neq \pm 1 \quad (۲) \checkmark$$

$$\rightarrow \sin n \neq \pm \frac{\sqrt{2}}{2}$$

$$D_f = \mathbb{R} - \left\{ \frac{K\pi}{2} + \frac{\pi}{4} \right\}$$

(ب)

(الف) (۶)

$$|\sin n| - 1 > 0 \rightarrow \sin n \geq \frac{1}{2}$$

$$D_f = \left[2K\pi + \frac{\pi}{6}, 2K\pi + \frac{5\pi}{6} \right]$$

$$\cos n - 1 \geq 0 \rightarrow \cos n \geq 1 \quad (۲) \checkmark$$

(ب)

میشود از آنجا که $|\cos n| \leq 1$ پس $\cos n = 1$ و $n = 2K\pi$

$$\cos n = 1 \rightarrow n = 2K\pi \rightarrow D_f = \{ 2K\pi \}$$

$$-1 \leq \cos y \leq 1, -1 \leq |2n-3| \leq 1$$

$$-1 \leq |2n-3| \leq 1 \rightarrow D_f = [-1, -1] \cup [1, 1]$$

(الف) (٧)

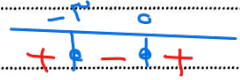
$$-1 \leq n^2 + 3n + 1 \leq 1$$

✓

(الف)

$$\begin{cases} n^2 + 3n + 1 \geq -1 \rightarrow n^2 + 3n + 2 \geq 0 \rightarrow (n+1)(n+2) \geq 0 \\ n \in (-\infty, -2] \cup [-1, +\infty) \\ n^2 + 3n + 1 \leq 1 \rightarrow n^2 + 3n \leq 0 \rightarrow n(n+3) \leq 0 \\ n \in [-3, 0] \end{cases}$$

ل.٧



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

$$y = \sqrt{1 - \log_2(n-2)}$$

$$n-2 \geq 0 \rightarrow n \geq 2$$

$$1 - \log_2(n-2) \geq 0 \rightarrow \log_2(n-2) \leq 1$$

$$2-2 \leq 2^1 \rightarrow n-2 \leq 4 \rightarrow n \leq 6 \quad D_f = (2, 6]$$

(الف) (٨)

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

ل.٧

✓

(الف)

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



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

$$k^n + 1 \neq 0 \rightarrow k^n \neq -1$$

مستحيل

$$D_f = \mathbb{R}$$

(الف) (٩)

$$k^n - 1 \neq 0 \rightarrow k^n \neq 1 \rightarrow k^n \neq k^0 \rightarrow n \neq 0$$

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

(الف)

$$k^n - 2 \neq 0 \rightarrow k^n \neq 2 \rightarrow 2^{2n} = 2^1 \rightarrow 2n = 1 \rightarrow n = \frac{1}{2}$$

$$D_f = \mathbb{R} - \left\{ \frac{1}{2} \right\}$$

(الف)

$$k^n - k \neq 0 \rightarrow k^n \neq k \rightarrow n \neq \log_k k \quad D_f = \mathbb{R} - \{ \log_k k \}$$

(الف)

$$r_m + 1 \neq w \rightarrow r_m \neq w - 1 \rightarrow n = \frac{w-1}{r}$$

$$D_f = \{n \mid n = \frac{K-1}{r}, K \neq w\}$$

(0)

(10)

$$\frac{r_m - r}{r_m - w} \neq w \rightarrow n = \frac{-w + r}{r_w - r} = \frac{w - r}{r_w - r}$$

$$D_f = \{n \mid n = \frac{w - r}{r_w - r}, K \neq w\}$$

(1)