

$$P_2 P' - P_2 x + y' + 9y + k = 0 \rightarrow \underbrace{P_2 P' - P_2 x + P'}_{P(x-1)P'} + \underbrace{y' + 9y + 9}_{(y+P_2)P'} = 0 \rightarrow k = 11$$

$$x=a \rightarrow a^p + pa = pa + a + p \rightarrow a^p + a - p = 0 \rightarrow (a+p)(a-1) = 0 \rightarrow \begin{cases} a = -p \\ a = 1 \end{cases}$$

$a = -p \rightarrow x^p + px \quad x \geq -p$
 $\textcircled{1} \quad x \rightarrow px \quad x \leq -p$

$a = 1 \rightarrow x^p + px \quad x \geq 1$
 $\textcircled{2} \quad x \rightarrow \cancel{x^p + px} \quad x \leq 1$

$a=1 \rightarrow \begin{cases} x^p + kx & x \geq 1 \\ x+k & x \leq 1 \end{cases}$

$$f(1) = 1 + k = \omega$$

$$|x+1| \geq p \rightarrow x+1 \geq p \rightarrow x \geq 1 \rightarrow x = -p \rightarrow 1 - b = a - c \rightarrow a + b =$$

$9x - a = 0$
 $\downarrow$
 (از عبارت x حذف)

$b - 13x = 0$
 $\swarrow$ $x = 2$
 $b - 9 = 0 \rightarrow b = 9$
 $\searrow$
 $(9 \times 2) - a = 0 \rightarrow a = 18$

$\rightarrow \frac{b}{a} = \frac{9}{18} = \frac{1}{2}$

این عبارت همیشه
لحقی است بلکه
باید فقط صورت شود

$$\frac{q-x}{x^p + px + p} = \frac{q-x}{(x+p)^p} > 0 \rightarrow q-x > 0$$

$\frac{x+1}{|x+1|} \geq 0 \rightarrow x+1 \geq 0 \rightarrow \boxed{x \geq -1}$
 $\text{①, ②} \cap \rightarrow [-1, 4] - \{1\}$

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

میشد

$[x] \gg \cdot \rightarrow [x] \gg K \rightarrow x \gg K \quad P - [x] \gg \cdot \rightarrow P \gg [x]$
 $D_f = \emptyset \quad \checkmark \quad K \gg x$

$$D_f = \emptyset$$

الف) $\frac{(x-4)(x+1)}{(x-4)(x-9)} \gg \frac{-\cancel{x}^* - \cancel{4} \quad \cancel{1} \quad \cancel{9}}{+\cancel{0} - \cancel{0} - \cancel{0} + \cancel{0}}$ $(-\infty, -4) \cup (-1, +\infty)$

ب) $\frac{(x-1)(x^2-x-4)}{(x+1)(x^2+x-4)} \gg \frac{-\cancel{x}^0 - \cancel{1} \quad -1 \quad 1 \quad \cancel{4}}{+\cancel{0} - \cancel{0} + \cancel{0} - \cancel{0} + \cancel{0}}$ $(-\infty, -4) \cup (-1, 1) \cup (4, +\infty)$

$$\frac{(x-1)(x^p-x-9)}{(x+1)(x^p+x-9)} \geq 0 \rightarrow \frac{-p-p-1}{+} \frac{1}{+} \frac{p-p}{-} \frac{1}{+} \quad (-\infty, -p) \cup [-p, 1) \cup [1, p) \cup [p, +\infty)$$

مسئله اول

$$[-x] - p \geq 0 \rightarrow [-x] \geq p \rightarrow -x \geq p \rightarrow x \leq -p$$

7

$(-\infty, -p]$

مسئله دوم

$$[x]^p - p[x] - 1 \neq 0 \rightarrow ([x] - 1)([x] + 1) \neq 0$$

$$[x] \neq 1 \quad [x] \neq -1 \rightarrow x \neq [1, \infty) \quad x \neq [-1, \infty)$$

$$R = [1, \infty) \cup [-1, \infty)$$

مسئله اول

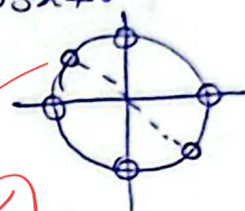
$$\frac{\cos x}{\sin x} + 1$$

$$\rightarrow \sin x \neq 0 \quad \cos x \neq 0$$

$$R = \left\{ k\pi, k\pi + \frac{\pi}{2}, k\pi - \frac{\pi}{2} \right\}$$

$$\frac{\sin x}{\cos x} + 1 \neq 0$$

$$\frac{\sin x}{\cos x} \neq -1$$

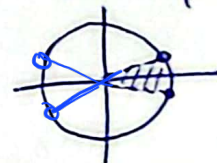


8

مسئله دوم

$$1 - k \sin^2 x \geq 0 \rightarrow 1 \geq k \sin^2 x \rightarrow \frac{1}{k} \geq \sin^2 x \rightarrow \frac{1}{k} \geq \sin^2 x \geq 0$$

$$\left\{ k\pi \pm \frac{\pi}{2} \right\}$$



$$1 - \log \frac{x-1}{p} \geq 0 \rightarrow 1 \geq \log \frac{x-1}{p}$$

$$\rightarrow x-1 > 0 \rightarrow x > 1$$

مسئله الف

$$\frac{1}{p} \geq \log \frac{x-1}{p} \rightarrow \frac{1}{p} \geq \log \frac{x-1}{p}$$

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

مسئله ب

$$x^p - x \geq 0 \rightarrow x(x-1) \geq 0$$

$$x^p - 14x \geq 0 \rightarrow x(x-14) \geq 0$$

$$1 - \log x \neq 0 \rightarrow 1 \neq \log x \rightarrow x^p - 14x - 1 \neq 0 \rightarrow (x-1)(x+1) \neq 0$$

$$D_f = (-\infty, -1) \cup (-1, 0) \cup (1, 14) \cup (14, +\infty)$$

مسئله الف

$$p^{kx-x^p}$$

$$-1 \geq 0 \rightarrow p^{kx-x^p} \geq 1 \rightarrow kx-x^p \geq 0$$

$$[1, 14]$$

10

مسألة) $\frac{\mu x + \alpha}{\nu x + \kappa} \in \omega \rightarrow \mu x + \alpha \in \nu x \omega + \kappa \omega \rightarrow$

10

$$\mu x - \nu x \omega \in -\alpha + \kappa \omega \rightarrow x(\mu - \nu \omega) \in -\alpha + \kappa \omega \rightarrow \dots \therefore x \in \frac{-\alpha + \kappa \omega}{\mu - \nu \omega}$$

$$\{x \mid x = \frac{-\alpha + \kappa k}{\mu - \nu k}, k \in \omega\}$$