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از این سریان داریم دسته A

SUBJECT:

$$\textcircled{1} f(x+y) = \begin{cases} 3x+5 & x \geq 1 \\ f_x - 1 & x < 1 \end{cases} \quad \begin{matrix} x+y \geq 1 \\ x+y < 1 \end{matrix}, f(t) = \begin{cases} 3t-1 & t \geq 1 \\ f_t - 9 & t < 1 \end{cases}$$

$$f(3-x) = \begin{cases} 3(3-x)-1 & 3-x \geq 1 \quad 0 \leq x \\ -3x+8 & \\ f(3-x)-9 & 3-x < 1 \quad x \leq 2 \\ -3x+2 & \end{cases} \quad \textcircled{2}$$

$$f(x+1) = \begin{cases} 3(x+1)-1 & x+1 \geq 1 \quad x \geq 0 \\ 3x+2 & \\ f(x+1)-9 & x+1 < 1 \quad x < 0 \\ x-8 & \end{cases}$$

$$\begin{array}{l} -f_{x+3} - f_{x+1} \quad | \quad -f_{x+3} - 3x-2 \\ -8x+8 \quad | \quad -8x+8 \\ \downarrow \quad \downarrow \\ -8x+8 \geq 0 \quad | \quad -8x+8 \geq 0 \\ 1 \geq x \quad | \quad 1 \geq x \end{array}$$

$$x = (-\infty, 1] \quad \checkmark$$

نیب عا (n) f نسبت به فنییم تابع صعودی

$$f_{3-n} \geq f_{n+1}$$

تابع صعودی $\rightarrow 3-n \geq n+1$

$$1 \leq n$$

SPADANA

$$a^n \begin{cases} 0 < a < 1 \rightarrow \text{تکثری} \\ a > 1 \rightarrow \text{صعودی} \end{cases}$$

SUBJECT:

④ $f(n) = (a^2 - 3)^x$ 0

$a^2 - 3 > 1 \rightarrow a > \sqrt{4}$ الف (صعودی) الیہ

$\rightarrow a > \sqrt{3} \quad a < -\sqrt{3} \quad a > 2 \text{ و } a < -2$

~~$a^2 - 3 \geq 0 \rightarrow a \geq \sqrt{3} \text{ و } a \leq -\sqrt{3}$~~ (ب) صعودی

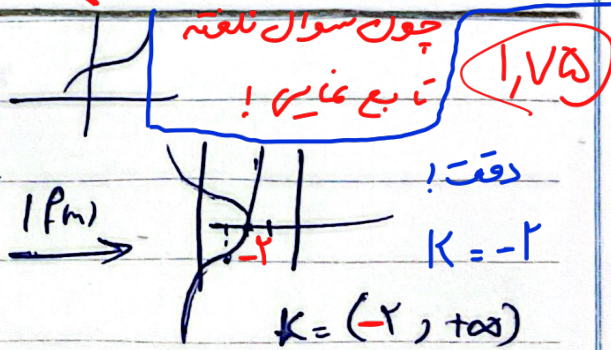
$a^2 - 3 > 1 \rightarrow a > 2 \text{ و } a < -2 \quad \cup \quad a^2 - 3 = 0 \rightarrow a = \pm \sqrt{3}$

⑤ $f(n) = x^2 + ax^2 + bx + c$

$\rightarrow y = (x+3)^2 - 1$

$\rightarrow y = x^2 + 6x + 9 - 1$

$y = x^2 + 6x + 8$



⑥ $f(f(n)) \leq f(\sqrt{n})$

$f(n) = n + \sqrt{n} - 2 \rightarrow$ (صعودی) (1, 2.5)

$\rightarrow f(n) \leq \sqrt{n} \rightarrow n + \sqrt{n} - 2 \leq \sqrt{n}$

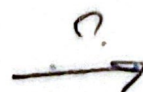
$\Rightarrow \boxed{n \leq 2} \rightarrow \{0, 1, 2\} \rightarrow [1, 2]$

⑦ $0 \leq x \rightarrow f \circ f(n) \xrightarrow{\text{نقطہ بالایی}} f(n) \geq 0 \rightarrow n \geq 1$ $\cos n \leq -\frac{1}{9}$

⑧ $9 \cos^2 n - 1 \geq 0 \rightarrow \cos^2 n \geq \frac{1}{9} \rightarrow \cos n \geq \frac{1}{3} \text{ و } \cos n \leq -\frac{1}{3}$

$1 - 9 \cos^2 n \geq 0 \rightarrow \cos^2 n \leq \frac{1}{9} \rightarrow -\frac{1}{3} \leq \cos n \leq \frac{1}{3}$

$\cos n = \pm \frac{1}{3} \rightarrow n = n^0 = 0$ 0



بستگی...

SPADANA

SUBJECT:

① $f(n) = n - [n+r]$ $g(n) = \frac{r^n - r^{-n}}{r}$

(r)

$R_{g \circ f} = ?$

$f(n) = n - [n] - r$ $g(n) = \frac{r^n - \frac{1}{r^n}}{r} = \frac{r^{n+1} - 1}{r^{n+1}}$

$0 \leq n - [n] < 1$

$-r \leq n - [n] - r < -1$

$\xrightarrow{n=-1} \frac{r^{-1} - 1}{r^{-1}} = \frac{1}{r} - 1 = -\frac{r-1}{r}$

$\xrightarrow{n=-r} \frac{r^{-r} - 1}{r^{-r}} = \frac{1}{r^r} - 1 = -\frac{r^r - 1}{r^r}$

$-\frac{1}{r}$

$\rightarrow R = \left[-\frac{1}{r}, -\frac{r-1}{r} \right)$ ✓