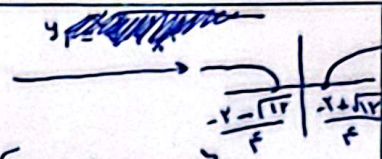


نام و نام خانوادگی:! بیست و هشت روز! کلاس:! پاسخنامه تشریحی تکلیف شماره ۱

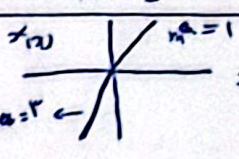
۱) $y^2 = 2x^2 + 2x - 1 \Rightarrow y = \sqrt{2x^2 + 2x - 1}$ 

$\Rightarrow ① \rightarrow$ تابع است

۲) $\nabla x = \frac{1}{y} \Rightarrow \cos y = 0 \Rightarrow y = \left\{ \frac{\pi}{2} + k\pi \mid k \in \mathbb{Z} \right\}$

۳) $(x+y)^2 = \sqrt{xy} \Rightarrow (x+y)^2 = \sqrt{xy} \Rightarrow (x+y)^2 - \sqrt{xy} = 0$
 $\Rightarrow x=y \Rightarrow 0 \leq x \leq 1$

۴) $(y^2 + 2)x = y^3 + 2y \Rightarrow x = \frac{y(y^2 + 2)}{y^2 + 2} \Rightarrow x = y$

۱) $x^2 = 2y - 1 \Rightarrow x = \sqrt{2y - 1}$ 

$\Rightarrow x = \sqrt{2y - 1}$ $\Rightarrow x \geq 1$ $\Rightarrow$ تابع است

۲) $[x] = 1 - [y] \quad \nabla x = 0 \Rightarrow y = [1, 2) \Rightarrow$ تابع نیست

$|x - 1| \geq 2 \Rightarrow x - 1 \geq 2 \vee x - 1 \leq -2 \Rightarrow x \geq 3 \vee x \leq -1$

$x \geq 3 \vee x \leq -1 \Rightarrow x^2 \geq 9 \vee x^2 \leq 1$

$\Rightarrow x^2 \geq 9 \vee x^2 \leq 1 \Rightarrow x \geq 3 \vee x \leq -1$

$\Rightarrow a + b = 3$

$S = a + b = -b \Rightarrow a = -2b$
 $[b < a] \Rightarrow a > b$

$P = ab = \frac{a}{-2} \Rightarrow -a = -2b^2 \Rightarrow a = 2b^2 \Rightarrow 2b^2 = -2b$
 $\Rightarrow b^2 = -b \Rightarrow b^2 + b = 0 \Rightarrow b(b + 1) = 0 \Rightarrow b = 0 \vee b = -1$
 $\Rightarrow b = -1 \Rightarrow a = 2$

$a + b = 1$

$+ \frac{1}{x} \parallel \parallel \parallel \parallel \Rightarrow a = 0, b \neq 0$

$\Rightarrow 2b + c = 0 \quad 2b = -c$

$m \neq 0 \Rightarrow b < 0 \Rightarrow |b| = -b$

$\Rightarrow \frac{1}{x} + \frac{-2b}{x} - 3|b| = -2b - (-3b) = b$

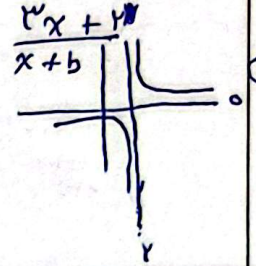
این تابع ~~برای~~ همواره انبساطی است زیرا اگر این چنین باشد تابع ثابتی می شود

دستبرد بداند باید نزدیکی باشد $(ad-bc < 0)$
 $2 \rightarrow 2n \Rightarrow x+b=2+b=0 \Rightarrow b=-2$

$2x(-1) - 2x1 = -1 \checkmark$

$\frac{a}{c} = \text{میانگین} = \frac{3}{1} = 3 \Rightarrow a = -3$

$b = -2$



الف) $\sqrt{x^3 - x}$ $x^3 - x = x(x^2 - 1) \Rightarrow x(x-1)(x+1)$

$\frac{-1}{1} \frac{0}{4} \frac{1}{1} + b = [-1, 0] \cup [1, \infty)$

$\therefore |x| - 1 \geq 0 \quad |x| \geq 1 \Rightarrow x \geq 1 \quad x \leq -1$
 $|x| - 1 \neq 0 \Rightarrow x \neq 1, -1$
 $\Rightarrow D = \mathbb{R} - [-1, 1]$

الف) $|x| - [x] \neq 0$ ~~.....~~ $\Rightarrow D = \mathbb{R} - \mathbb{N}$

$\therefore \sqrt{x} + \sqrt{y} = 9$

~~.....~~
 $\sqrt{y} = 9 - \sqrt{x} \Rightarrow y = (9 - \sqrt{x})^2 \Rightarrow 9 - \sqrt{x} \geq 0 \Rightarrow \sqrt{x} \leq 9 \Rightarrow x \leq 81$
 $x \geq 0 \wedge x \geq 0 \Rightarrow D = [0, 81]$

$2x - \frac{1}{x} = p \Rightarrow 2x + \frac{1}{x} = p + 1$

$\Rightarrow [p] + [p+1] = 2[p] + 1 \Rightarrow [p] > \frac{1}{2}$

$\Rightarrow p \geq 1 \Rightarrow 2x - \frac{1}{x} \geq 1 \Rightarrow 2x \geq \frac{1}{x} \Rightarrow x \geq \frac{1}{2}$

$\Rightarrow D = \left[\frac{1}{2}, \infty\right)$

$\log\left(\frac{2x-a}{1}\right) \leq 1$

$c - b = a$

$0 < 2x - a \leq 10$
 $\Rightarrow 0 < x - \frac{a}{2} \leq 5$

$\frac{a}{2} < x \leq 5 + \frac{a}{2}$

$\left(\frac{a}{2}, 5 + \frac{a}{2}\right]$
 $5 + \frac{a}{2} - \frac{a}{2} = 5$