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شماره متنی زیر دهم در دفتران

$$f(x) = \begin{cases} 2x - 1 & x > a \\ 1 & x \leq a \end{cases} \quad \text{۱۰۰}$$

$$1 < a - 1 \leq a^2 - 1 < a + 1 < \dots \Rightarrow a \geq -1 \quad (۲)$$

$$f(x) = \begin{cases} f(x) = 2x + 1 & x > 1 \\ f(x) = 1 & x \leq 1 \end{cases} \quad \text{۲۰۰}$$

۱) $f(1) = ? \quad f(1) = 2 \cdot 1 - 1 = 1 \quad \boxed{k = -1} \quad (۳)$

۲) $f(f(x)) = 1 \quad f(2x - 1) = 1 \Rightarrow 2(2x - 1) - 1 = 1 \Rightarrow 4x - 3 = 1 \Rightarrow 4x = 4 \Rightarrow x = 1$

$A = (1, a)$ $f(x) = \frac{ax}{a-1} \Rightarrow \frac{1 \cdot a}{a-1} = 1 \Rightarrow a = a-1 \Rightarrow a = 1$ ۲۰۰

$$2a - 1 = a \Rightarrow a = 1 \quad \boxed{a = 1} \quad (۴)$$

$$f = \left\{ (1, 0), (2, 1), (3, 2), (4, 3) \right\} \quad \text{۱۰۰}$$

0, 1 1, 2 2, 3 3, 4

$$g = \left\{ (1, 1), (2, 2), (3, 3) \right\}$$

1, 2 2, 3 3, 4

2 من متی یزدی و زمان

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۵ اراک سران ۲

$$f(f^{-1}(a)) = 1 = \{(5,5), (7,7), (3,3), (6,6)\}$$

$$f^{-1} \circ f = (3,3) (4,4) (7,7) (9,9) \quad 3 \rightarrow 5 \rightarrow 7$$

$$f \circ f^{-1} = \{(2,5) (5,2)\}$$

$$f^{-1} \circ f = \{(2,9) (9,2) (7,3)\}$$

$$f \circ f = \{(2,4) (4,8) (6,9)\} \quad g = \{(2,1) (4,3) (6,5)\} \quad \text{سران ۵}$$

$$h = \{(1,2) (3,4) (5,1) (0,1)\}$$

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$$\frac{h}{f \circ g} = \{(1, \frac{1}{2}), (3, \frac{1}{4}), (5, \frac{1}{5})\}$$

$$h \circ g = 1 \rightarrow 2 \rightarrow 3 \quad 5 \rightarrow 6 \rightarrow 7$$

$$2 \rightarrow 4 \rightarrow 8$$

$$(1,4) (3,7) (5,0)$$

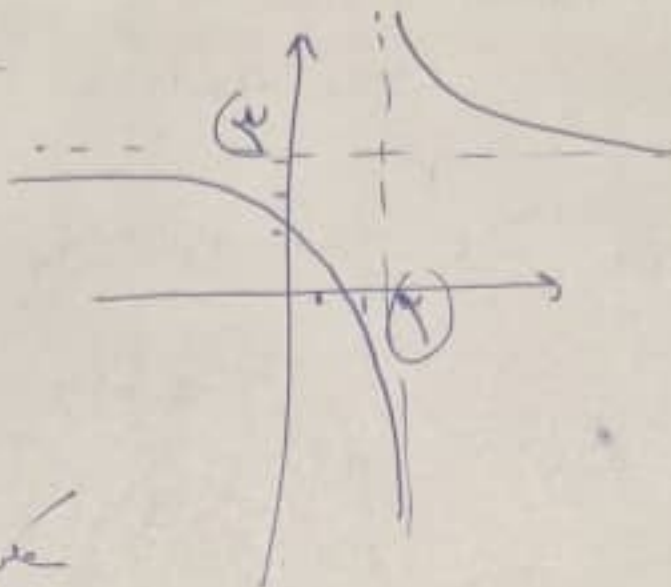
ساده ترین معادله درجه دوم در قران

$$y = \frac{x^2 + 1}{2 - x}$$

سوال ۴

$$x_{\text{محدود}} = 2$$

$$y_{\text{محدود}} = 0$$



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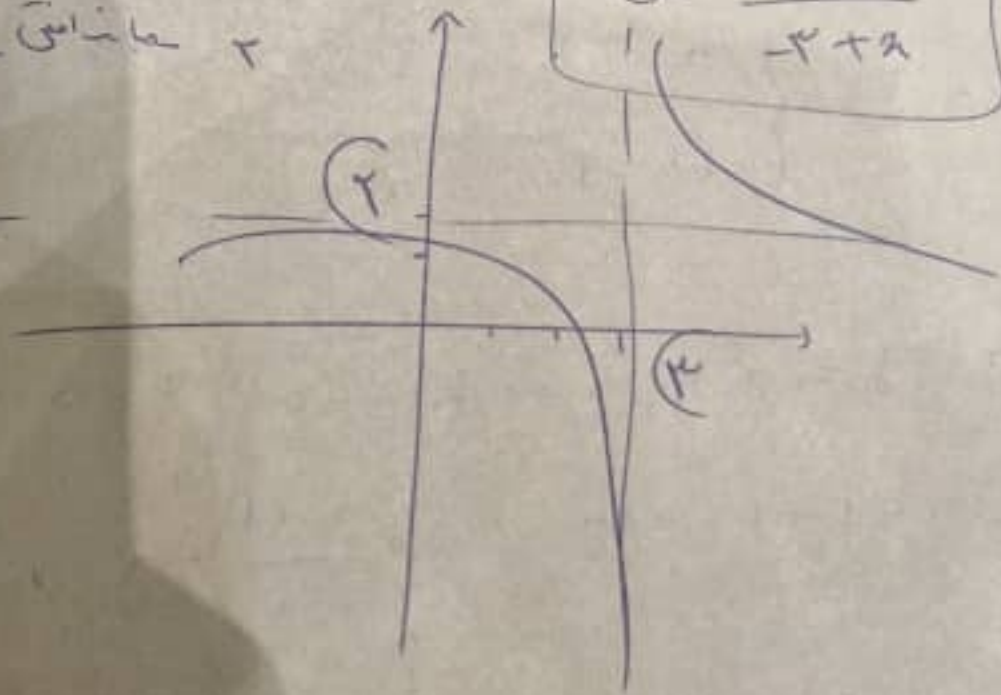
$$y = \frac{x^2 + 1}{2 - x} \rightarrow x = \frac{y^2 + 1}{y - 2}$$

$$xy - 2x = y^2 + 1$$

$$-2x - 1 = y(2 - x)$$

$$y = \frac{x^2 + 1}{2 - x} \quad \begin{matrix} x_{\text{محدود}} = 2 \\ y_{\text{محدود}} = 0 \end{matrix}$$

$$y = \frac{x^2 + 1}{-x + 2}$$



کے لیے صحتیہ زعم و دھاران

$$F(x) = |x-1| - |x-2|$$

$$-2 < 1$$

$$a=1$$

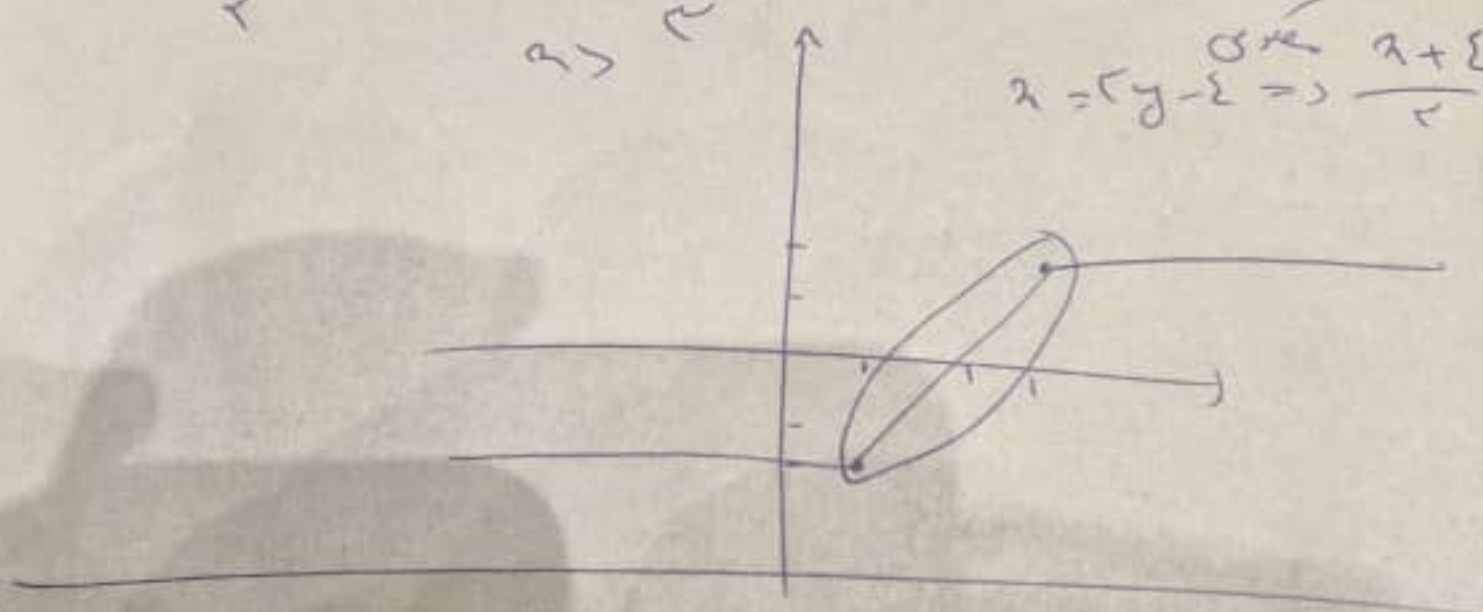
$$b=2$$

$$x-2 \quad |x| \leq 2$$

$$y = 2x - 2 \quad (5)$$

$$x = 2y - 2$$

$$x = 2y - 2 \Rightarrow \frac{x+2}{2} = y$$



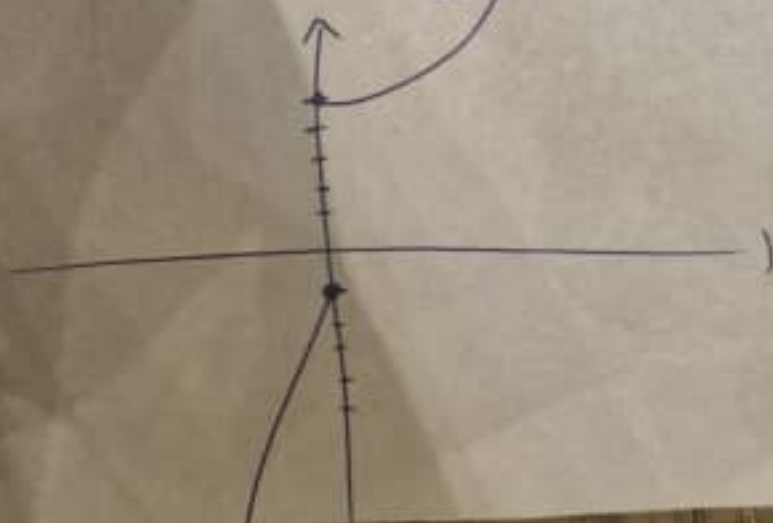
$$f(x) = \begin{cases} x^2 + 2 & x \geq 1 \\ |x-1| & x \leq 0 \end{cases}$$

$$\hat{=}$$

$$x^2 + 2 = y \Rightarrow y^2 + 2 = x \Rightarrow \sqrt{y-2} = x \quad x \geq 0$$

$$(5)$$

$$y = |x-1| \Rightarrow x = |y-1| \Rightarrow \frac{x+1}{2} = y \quad x \leq -1$$



شماره منتهی: ۴۰۰۰ و ۱۰۰۰۰

$$f(z) = z^c - \frac{(z+1)^c}{z+c} =, f(z) = \frac{\cancel{z^c + cz^{c-1} + \dots + 1} - \cancel{z^c + cz^{c-1} + \dots + 1}}{z+c}$$

$$= 1 \quad f'(z) = \frac{cz+1}{-z-c}$$

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$$\sigma_{\text{دوره}} \Rightarrow z = \frac{cz+1}{-z-c} =, -cz - cn = cz + 1 \Rightarrow z = \frac{-cn-1}{c+n}$$

$$\chi^2 \Rightarrow z = \frac{-cn-1}{c+n}$$

$$f^{-1}(b) = ? = \sqrt[n]{b} = \frac{cz+1}{-z-c}$$

$$\Rightarrow cz + 1 = -cn - 1 \Rightarrow \boxed{z=0}$$

$$\begin{cases} a = -c \\ b = -1 \\ d = 1 \end{cases}$$

$$f(z) = \frac{z}{z^c+1} =, yz^c = \frac{-z+1}{\frac{1}{z}} = \frac{1-z}{z}$$

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$$z \Rightarrow \frac{\sqrt{1-4y^c} \pm 1}{4y}$$

$$1-4y^c \geq 0 \Rightarrow \frac{1}{4} \geq |y|$$

$$f^{-1} = \frac{1 \pm \sqrt{1-4y^c}}{4y} \quad \text{از دو جواب جدا شده
یکی فقط + قابل قبول}$$