

شماره متغیر درجه دوم و قدرانی

$$f(x) = \begin{cases} 2x^2 - 4 & x > a \\ 4a - 2x & x \leq a \end{cases} \quad \text{بـ ۱۰}$$

$$1 < a - 2x \leq a^2 - 4a + 4 \geq 0 \Rightarrow a \geq -2$$

$f(x) = \begin{cases} f(x) = 2x^2 - 4 & x > a \\ f(x) = 4a - 2x & x \leq a \end{cases}$ بـ ۱۰

$f(2) = 4, f(2) = 4a - 4$

الف) $f(x) = 0 \Rightarrow f(x) = 4a - 4 = 0 \Rightarrow a = 1$ k = -1

ب) $f(f(x)) = 0 \Rightarrow f(4a - 4) = 0 \Rightarrow 4(4a - 4) - 4 = 0 \Rightarrow 16a - 16 - 4 = 0 \Rightarrow 16a = 20 \Rightarrow a = \frac{5}{4}$

$A = (2a, a)$ $f(x) = \frac{ax}{a-1} \Rightarrow \frac{2a}{a-1}$ بـ ۱۰

$2a - 2 = a \Rightarrow a = 2$ a = 2

$f = \{ (2, 0), (2, 2), (2, 4), (4, 2) \}$ بـ ۱۰

$0, 2 \quad 2, 2 \quad 2, 4 \quad 4, 2$

$g = \{ (2, 2), (4, 2), (4, 0) \}$

$2, 2 \quad 4, 2 \quad 4, 0$

2 من متی یزدی ۱۸ دفران

۱۸ دفران

۱۸ دفران

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

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

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

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

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

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

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

$$h \circ g = 1 \rightarrow 2 \rightarrow 4 \quad 5 \rightarrow 6 \rightarrow 9$$

$$2 \rightarrow 4 \rightarrow 8$$

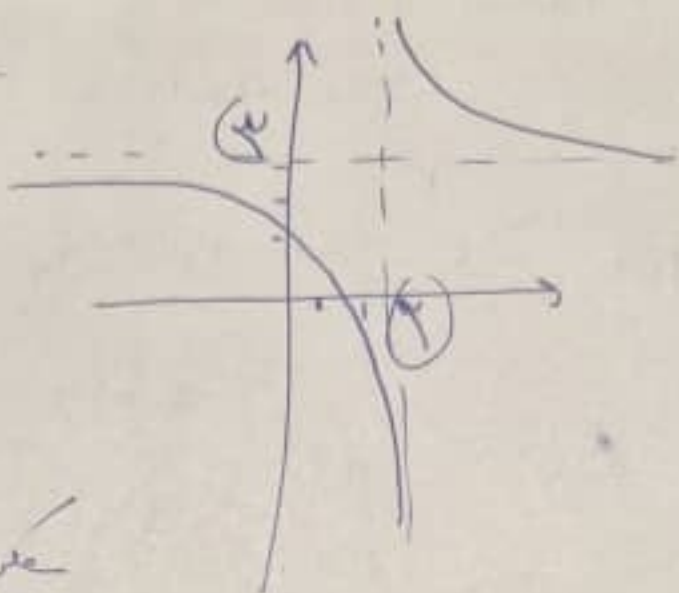
$$(1,4) (3,8) (5,0)$$

ساده ترین معادله درجه دوم

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

$$x^2 - 2x + 1 = 0$$

$$(x - 1)^2 = 0$$



ساده ترین

$$y = \frac{x^2 + 1}{x - 2} \rightarrow x^2 - 2x + 1 = 0$$

$$x^2 - 2x + 1 = 0$$

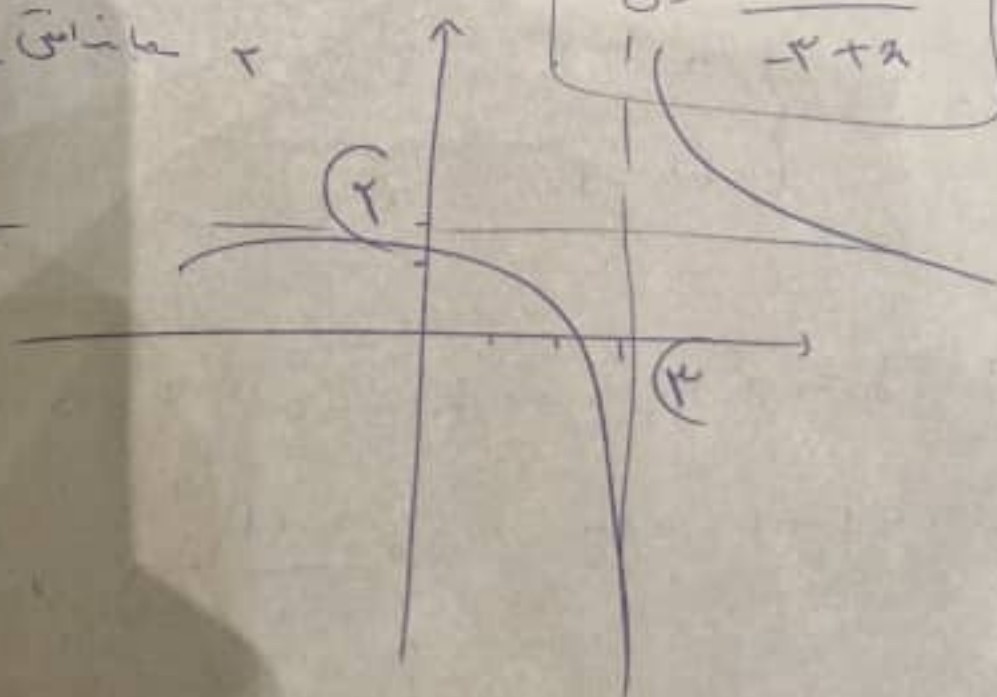
$$(x - 1)^2 = 0$$

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

$$x^2 - 2x + 1 = 0$$

$$(x - 1)^2 = 0$$

$$x = 1$$



کے لیے صحتیہ زعم ب دضاران

$$F(x) = |x-1| - |x-5|$$

صحتیہ

$$a=1$$

$$b=5$$

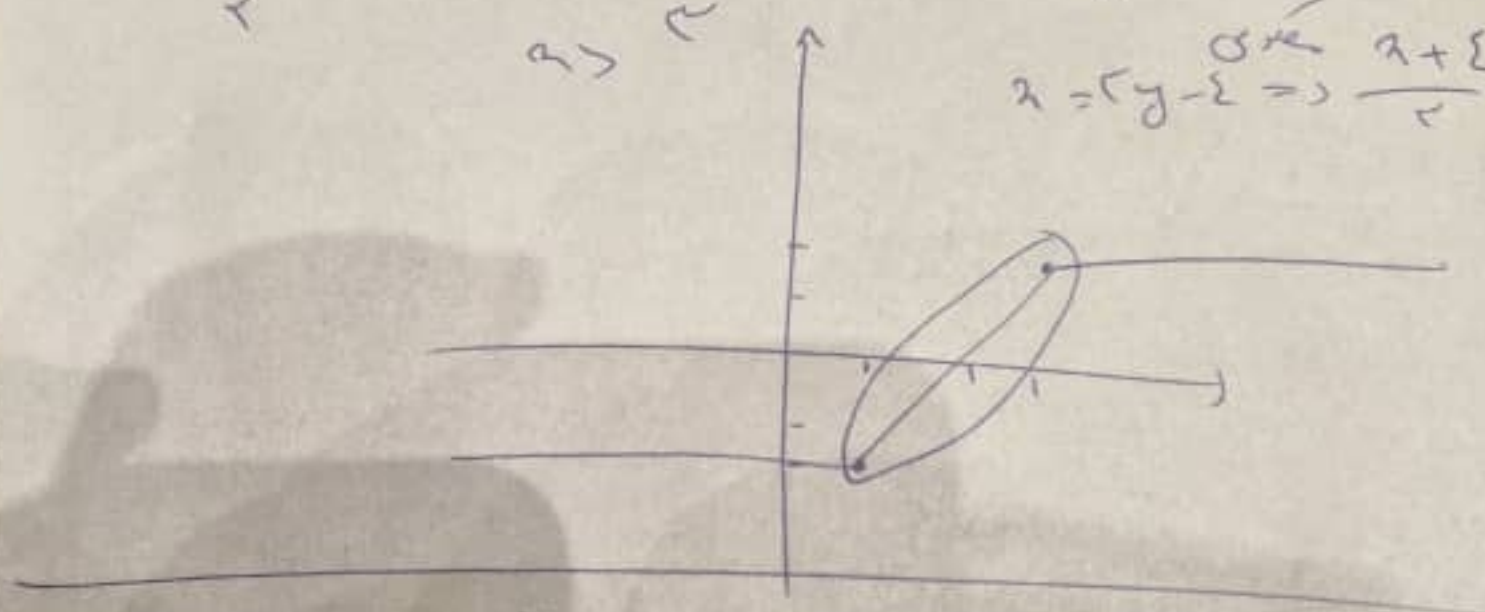
$$-5 < 1$$

$$x-5 \quad |x| \leq 5$$

$$y = 2x - 5$$

$$x = 5y - 5$$

$$x = 5y - 5 \Rightarrow \frac{x+5}{5} = y$$

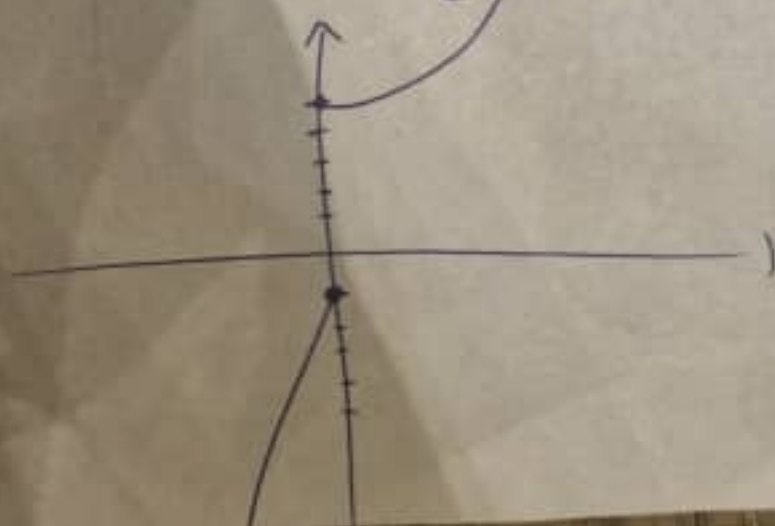


$$f(x) = \begin{cases} x^5 + 5 & x \geq 1 \\ |x-1| & x \leq 0 \end{cases}$$

صحتیہ

$$x^5 + 5 = y \Rightarrow y^5 + 5 = x \Rightarrow \sqrt[5]{x-5} \quad x \geq 0$$

$$y = 5x - 1 \Rightarrow x = 5y - 1 \Rightarrow \frac{x+1}{5} = y \quad x \leq -1$$



شماره منتهی: ۴۰۰ و ۱۰۰۰

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

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

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

$$\lambda^c \Rightarrow z = \frac{-c-1}{c+1}$$

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

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

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

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

$$z =, \frac{\sqrt{1-zy^c} \pm 1}{zy^c}$$

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

$$f^{-1} = \frac{1 \pm \sqrt{1-zy^c}}{zy^c} \quad \text{از دو جواب جدا شده}$$