

بیت آفرین

$$f(x) = \sqrt{\frac{x-1}{x} - \frac{x}{x-1}} \geq 0$$

$$\frac{(x-1)^2 - x^2}{x(x-1)} \geq 0 \quad \frac{(x-1-x)(x-1+x)}{x(x-1)} \geq 0$$

$$\frac{1-2x}{x(x-1)} \geq 0 \rightarrow \frac{1}{x} - \frac{2}{x-1} \geq 0$$

$$f(x) = \frac{1}{x+1} - \frac{1}{x} \quad x \neq 1, -1, 0, -2$$

$$R = \left\{ 1, -1, 0, -2, -\frac{5}{2} \right\} \quad \frac{1}{x-1} \neq \frac{-1}{x+2}$$

$$-1x-4 = x-1$$

$$-2x = -5 \quad x \neq -\frac{5}{2}$$

$$f(x) = \sqrt{\left(\left(\frac{1}{x}\right)^x - 9\right)(12x - 5^x)} \geq 0$$

$$\left(\frac{1}{x}\right)^x - 9 \geq 0 \rightarrow 12^x - 12^y \geq 0$$

$$12^x \geq 12^y \quad x \leq y$$

روز نویسنده و ورزش

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

7
1402

$$32 - \varepsilon^x \geq 0$$

ادامه انف ۲:

$$2^x \geq 2^{2x} \rightarrow 2x \leq x$$

$$x \leq -2$$

$$\left(\frac{1}{2}\right)^x - 9 \leq 0, \quad 32 - \varepsilon^x \leq 0$$

$$2^{-x} \leq 9$$

$$2^x \leq 2^{2x}$$

$$x \geq -2$$

$$x \geq 2/d \rightarrow x \geq 2$$

$$D_f = (-\infty, -2] \cup [2, +\infty)$$

$$\sqrt{x-1} + \sqrt{y+1} = 3 \quad x \geq 1$$

$$\sqrt{y+1} = 3 - \sqrt{x-1}$$

$$D_f = [1, 12]$$

$$\sqrt{x-1} \leq 3$$

$$x-1 \leq 1$$

$$x \leq 12$$

$$x-1 \geq 0 \rightarrow x \geq 1$$

$$f(x) = \log_{\varepsilon} (x^2 - x - 2)$$

$$\sqrt{x^2 - 1} + 1 \quad x^2 - x - 2 > 0$$

$$x^2 - 1 \geq 0$$

$$\frac{1 \pm \sqrt{5}}{2}, \quad x_1 = 1, \quad x_2 = -1$$

7	1	2	3	4	5	6	7
1402	8	9	10	11	12	13	14
	15	16	17	18	19	20	21
	22	23	24	25	26	27	28
	29	30					

$$(-\infty, -1) \cup (1, +\infty)$$

$$f(x) = \sqrt{1 + ax - x^2} \quad (1)$$

$$x^2 - ax - 1 \geq 0$$

$$[-1, b]$$

$$\frac{-a \pm \sqrt{a^2 + 4}}{2}$$

$$1x^2 + x - 9 \geq 0$$

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

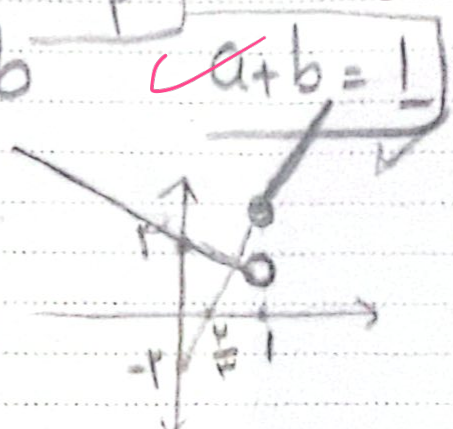
$$x^2 + x - 12 \geq 0$$

$$a = \frac{-1}{2}$$

$$(x+3)(x-4) \rightarrow \frac{+3}{2} = b$$

$$a+b=1$$

$$f(x) = \begin{cases} 1x-1 & x \geq 1 \\ 1x+1 & x < 1 \end{cases}$$



$$g(x) = \sqrt{f(x) - x} \geq 0 \rightarrow f(x) \geq x$$

$$x \geq -1 \rightarrow 1x-1 \geq 0 \rightarrow x \geq 1$$

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

$$1x+1 \geq 0 \rightarrow x \geq -1$$

$$f\left(\sin \frac{\pi}{3} + \cos \frac{\pi}{3}\right) = f\left(\frac{\sqrt{3}}{2} + 1\right)$$

$$1\left(\frac{\sqrt{3}}{2} + 1 + \sqrt{3}\right) - 1\sqrt{3} - 2$$

$$\frac{\sqrt{3}}{2} + 1 + \sqrt{3} - \sqrt{3} - 2 = \frac{\sqrt{3}}{2} - 1 = \frac{-1}{2}$$

$$f(x) = \frac{x+1}{x-1} \quad (V)$$

$$f(f(x)) = x$$

$$f(x) = \frac{x+1}{x-1} \rightarrow f\left(\frac{x+1}{x-1}\right) =$$

$$\frac{\frac{x+1}{x-1} + 1}{\frac{x+1}{x-1} - 1} = x \rightarrow \frac{x+1+x-1}{x+1-x-1} = x$$

$$\frac{2x}{x-2} = x \rightarrow \{x=2\} \text{ یا } \{x=0\}$$

مقادیر مجزأ

$$f(x) = x^2 - 4x \quad f(g(x)) = -4 \quad (\wedge)$$

$$g(x) = \sqrt{x^2 - 1}$$

$$g(x) = \sqrt{x^2 - 1}$$

$$f(g(x)) = (x^2 - 1) - 4\sqrt{x^2 - 1} = -4$$

$$(x^2 - 1) - 4\sqrt{x^2 - 1} + 4 = 0 \quad \sqrt{x^2 - 1} = t$$

$$t^2 - 4t + 4 = 0 \rightarrow (t - 2)^2 = 0$$

$$t = 2$$

$$\sqrt{x^2 - 1} = 2$$

$$x^2 - 1 = 4$$

$$x = \pm \sqrt{5}$$

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$$f(a+3) = a^2 - 2a + 9$$

(9)

$$f(2) \times f(3) = ? \quad 39 + 10 + 9 = 58$$

$$\downarrow$$

$$a=1 \rightarrow 1 - 2 + 9 = 8$$

155

$$f(k \cos a + d \cos a) = \tan^2 a$$

(10)

$$f(1/d) = ? \quad k \cos a + d \cos a = \frac{1}{d}$$

$$k \cos a + d \cos a - \frac{1}{d} = 0$$

$$kd + d^2 = 1$$

$$-d \pm 9 = \cos a$$

$$\tan^2\left(\frac{\pi}{4}\right) = 1$$

$$\cos a = \frac{1}{k} \rightarrow a = 90^\circ$$

$$\cos a = \frac{1}{k} \times 2$$

$$= 1.5 \cos a$$