

$$g(x) = \sqrt{-(x^2 - 4x + 2)} = \sqrt{-(x-2)^2} \quad \text{تاند 17 اس - (1)}$$

لهواره منفي اس - دنته به ازای $x=2$

صفری شود و هرا - بار

$$\Rightarrow f(x) = 2 \quad \text{و } x=17$$

$$\sqrt{\log_2(x-1)} = 2 \Rightarrow \log_2(x-1) = 4 \Rightarrow x-1 = 16$$

$$g(x) = x^2 - 3x + 1 \quad , \quad f(x) = 2x - 5 \quad (2)$$

$$g \circ f(x) = (2x-5)^2 - 3(2x-5) + 1 = 4x^2 - 24x + 16$$

$$f \circ g(x) = 2(x^2 - 3x + 1) - 5 = 2x^2 - 6x - 3$$

$$\Rightarrow 4x^2 - 24x + 16 = 2x^2 - 6x - 3 \rightarrow 2x^2 - 18x + 19 = 0$$

$$a^2 + b^2 = \frac{(a+b)^2}{4} - \frac{ab}{2} = 100 - 36 = 64 \rightarrow \text{(مجموع مربعات)}$$

$$g \circ f(x) = 4x^2 + 11 \quad , \quad f(x) = 2x \quad (3)$$

$$\rightarrow g(2x) = 4x^2 + 11 \quad \xrightarrow{x=T/2} \quad g(T) = \frac{4T^2}{4} + 11$$

به ازای $x=T$ - $g(x)$ کترین مقدار خود را دارد

$$g\left(\frac{x-v}{2}\right) = \frac{4\left(\frac{x-v}{2}\right)^2}{4} + 11 = 11 \rightarrow \min$$

$$f(x) = 2x - 5 \quad , \quad f \circ g(x) = 2x^2 - 4x - 1 \quad (4)$$

$$2g(x) - 5 = 2x^2 - 4x - 1 \rightarrow g(x) = x^2 - 2x + 1$$

$$g \circ f = (2x-5)^2 - 2(2x-5) + 1 = 4x^2 - 10x + 24$$

$$r(g(x)) = 2f(x) - 12 \Rightarrow g(x) = \frac{1}{2}f(x) - 6 \quad (5)$$

$$f(x) = -x + 5 \quad , \quad f(x) = \frac{1}{2}f(x) + 6 = -x + 5 \rightarrow f(x) = 2x + 2$$

$$g(x) = 2x - 1 \quad , \quad f \circ g(x) = \text{CRAND} + 2 = 4x - 2 + 2 = 4x$$

$$\rightarrow \text{شبه متوازی} \quad \frac{r}{a} = 4 \Rightarrow a = -\frac{1}{4} \rightarrow \text{جاب}$$

$$f(x) = a^x, \quad g(x) = \log_r x \quad (4)$$

$$f \circ g(x) = a^{\log_r x} = x^r \quad / \quad g \circ f(x) = \log_r a^x = rx$$

$$r^x \ll x \rightarrow x = r, x = 1, x = 0 \quad (\text{بازی ۳ عدد})$$

$$f\left(\frac{x^r - r}{x}\right) = x^r + \frac{r}{x^r} + x - \frac{r}{x} - r \quad (5)$$

$$\downarrow \quad \rightarrow \quad \left(x - \frac{r}{x}\right)^r + x - \frac{r}{x}$$

$$x^r + \frac{r}{x^r} = \left(x - \frac{r}{x}\right)^r + r$$

$$t = x - \frac{r}{x} \quad f(t) = t^r + t$$

$$Df \circ g = x \in Dg \cap g(x) \in Df(x) \quad \log_r x \Rightarrow x > 0 = Df(x)$$

$$\Rightarrow Df \circ g = (0, \infty) \cap \mathbb{R} \quad \frac{1}{x} - \frac{1}{x^2} > 0 \rightarrow \frac{1}{-1+1}$$

$$\rightarrow \min g(x) = g\left(\frac{-b}{a}\right) = g(x) = 19$$

$$\rightarrow f \circ g(x) = \min \rightarrow f \circ g(x) = f(14) = 2 \rightarrow Df \circ g [r_0 + \infty)$$

$$[0, \infty) \cap [r, +\infty) \Rightarrow [r, +\infty)$$

$$f \circ f(x) = 1 - r f(x)^r = f(x) = 1 - rx^r \quad (6)$$

$$h \circ g(x) = (x-1)^r + r(x-1) + 1 = x^r - rx^r + rx - r$$

$$x^r - rx^r + rx - r = 1 - rx^r \Rightarrow x^r + rx - r = 0$$

$$\xrightarrow{\text{شماره}} rx^r + \delta \quad \text{تابع مثبت است، تابع منفی است، تابع مثبت است}$$

$$f(x) = x - \frac{r}{x} \quad g \circ f(x) = ax^r + rx \quad (10)$$

$$\rightarrow g(x - \frac{r}{x}) = ax^r + rx \rightarrow x - \frac{r}{x} = c \Rightarrow x = r, -1$$

$$\rightarrow \text{if } x = 1 \quad 9fa + 1 = 1 \rightarrow a = 0$$

$$\text{if } x = -1 \quad -a + r = 1 \rightarrow a = -1$$

CREND