

$$D_{g \circ f} = \{x \in D_f \mid f(x) \in D_g\}$$

$$D_f = x-1 > 0 \rightarrow x > 1 \quad \text{I} \quad \log_2^{x-1} \geq 0 \rightarrow \log_2^{x-1} \geq \log_2^1 \rightarrow x \geq 2 \quad \text{II}$$

$$D_g = \sqrt{-(x-2)^2} \geq 0 \rightarrow x \leq 2 \rightarrow \sqrt{\log_2^{x-1}} \leq 2 \xrightarrow{\text{توان ۲}} \log_2^{x-1} \leq 4$$

$$\log_2^{x-1} \leq \log_2^{16} \rightarrow x-1 \leq 16 \rightarrow x \leq 17 \quad \text{III} \quad \text{I, II, III} \rightarrow D_{g \circ f} = [2, 17]$$

$$f \circ g = f(g(x)) \rightarrow 2(x^2 - 3x + 1) - 5 = 2x^2 - 4x + 11$$

$$g \circ f = g(f(x)) \rightarrow (2x-5)^2 - 3(2x-5) + 1 = 4x^2 - 24x + 21$$

$$f \circ g = g \circ f \rightarrow 4x^2 - 24x + 21 = 2x^2 - 4x + 11 \rightarrow 2x^2 - 20x + 10 = 0$$

$$\text{خواسته سوال: } \alpha^2 + \beta^2 = (\alpha + \beta)^2 - 2\alpha\beta = 25 - 2\rho = (10)^2 - 2\left(\frac{40}{2}\right) = 40$$

$$2x = t \rightarrow x = \frac{t}{2} \rightarrow g(t) = 5\frac{t^2}{4} + 11 \rightarrow g(x) = \frac{5x^2}{2} + 11$$

$$\text{خواسته سوال: } g(x-1) = \frac{5(x-1)^2}{2} + 11 \rightarrow g(x-1) = \frac{5x^2 - 10x + 16}{2}$$

$$\text{رأس آن} = \text{نقطه min تابع} = \text{کمترین مقدار} \rightarrow S = \frac{-b}{2a} = 5$$

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

$$\text{خواسته سوال: } g \circ f = g(f(x)) = (3x-4)^2 - 2(3x-4) + 1 = 9x^2 - 24x + 14 - 4x + 8 + 1 = 9x^2 - 28x + 23$$

$$g \circ f = 9x^2 - 28x + 23$$

$$2g(x) = 3f(x) - 14 \rightarrow 2(f(x) - g(x)) = -f(x) + 14 \rightarrow f - g = \frac{-f(x)}{2} + 7$$

$$f(x) = ax + b, \quad \frac{-ax + b}{2} + 7 = y \rightarrow \begin{cases} (0, 5) \rightarrow b = +14 \\ (5, 0) \rightarrow a = 2 \end{cases} \rightarrow f(x) = 2x + 14$$

$$2g(x) = 3(2x+14) - 14 \rightarrow g(x) = 3x + 17$$

$$f(g(x)) = 2(3x+17) + 14 = 6x + 50 \xrightarrow{(2, 0)} 9a = -2 \rightarrow a = \frac{-2}{9}$$

$$f \circ g = f(g(x)) = 9^{\log_9 x} = x \quad g \circ f = g(f(x)) = \log_9 9^x = x$$

$$x^2 \leq 2x \rightarrow x(x-2) \leq 0 \rightarrow \frac{x}{y} \mid \begin{array}{c} 0 \\ + \end{array} \mid \begin{array}{c} 0 \\ - \end{array} \mid \begin{array}{c} 2 \\ + \end{array} \rightarrow x \in [0, 2]$$

← تعداد اعضای صبیح مجموعه: ۳۰ عدد

$$f\left(\frac{x^T - \mu}{\sigma}\right) = f\left(x - \frac{\mu}{\sigma}\right) = x - \frac{\mu}{\sigma} + x^T + \frac{\Sigma}{\sigma^T} - \Sigma$$

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

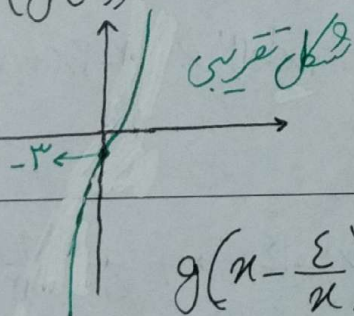
$$f \circ g = f(g(x)) \rightarrow \log_r^{(\wedge x - x^r)} \rightarrow D_{f \circ g} = \wedge x - x^r > 0 \rightarrow \frac{x}{y} - \frac{0}{1} + \frac{\wedge}{1} -$$

$R_{\log} =$ 

$$A \cap B = (0, 1) \cap \mathbb{R} = (0, 1)$$

$$f(f(x)) = 1 - 2f(x) \longrightarrow f(x) = 1 - 2x$$

$$h(g(x)) = f(x) \rightarrow (x-1)^{\vee} + \gamma(x-1) + 1 = 1 - \gamma x^{\vee} \rightarrow x^{\vee} + \Delta x - \gamma^{\vee} = 0$$



تعداد ریشه های آن یکی است.

[illegible]

$$x - \frac{\Sigma}{x} = \mu \rightarrow x^2 - \mu x - \Sigma = 0$$

$$(x - \Sigma)(x + 1) = 0$$