نام و نام خانوادگی ...امیرعلی رئیسی... پاسخنامه تشریحی تکلیف شماره ..۸.. کلاس ...دوازدهم B...

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$D_f = x > 1$

$D_g = \varnothing$

$g(x) = \sqrt{-(x-2)^2}$ همواره منفی

$D_{gof} = \{\underbrace{x \in D_f}_{x>1} : \underbrace{f(x) \in D_g}_{f(x)\in\varnothing}\} \Rightarrow D_{gof} = \varnothing$

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$fog(x) = 2(x^2-3x+8) - 5 = 2x^2 - 6x + 11$

$gof(x) = (2x-5)^2 - 3(2x-5) + 8 = 4x^2 - 20x + 25 - 6x + 15 + 8 = 4x^2 - 26x + 48$

$2x^2 - 6x + 11 = 4x^2 - 26x + 48 \Rightarrow 2x^2 - 20x + 37 = 0$

$S = 10$, $P = \frac{37}{2}$

$\alpha^2 + \beta^2 = S^2 - 2P = 100 - 37 = 63$

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$2x = t \Rightarrow x = \frac{t}{2}$

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

$g(x-7) = \frac{5(x-7)^2}{4} + 11 = \frac{5x^2 - 70x + 245 + 44}{4} = \frac{5}{4}x^2 - \frac{35}{2}x + \frac{289}{4}$

$\frac{-b}{2a} = x_{min} = \frac{\frac{35}{2}}{\frac{5}{2}} = 7 \Rightarrow y_{min} = \frac{245}{4} - \frac{490}{4} + \frac{289}{4}$ → 11

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$if\ (x=5) \Rightarrow f(5) + \underbrace{2f(5) - 2g(5)}_{0} = 14 \Rightarrow f(5) = 14$

$if\ (x=0) \Rightarrow f(0) + \underbrace{2f(0) - 2g(0)}_{10} = 14 \Rightarrow f(0) = 4$

$\Rightarrow f(x) = 2x + 4$

$2g(x) = 6x + 12 - 14 \Rightarrow 2g(x) = 6x - 2 \Rightarrow g(x) = 3x - 1$

$fog(x) = 2(3x-1) + 4 = 6x + 2 \xrightarrow{y=0} -2 = 6x \Rightarrow x = -\frac{1}{3}$

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$3g(x) - 4 = 3x^2 - 6x - 1 \Rightarrow 3g(x) = 3x^2 - 6x + 3 \Rightarrow g(x) = x^2 - 2x + 1$

$gof(x) = (3x-4)^2 - 2(3x-4) + 1 = 9x^2 - 24x + 16 - 6x + 8 + 1 = 9x^2 - 30x + 25$

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$fog(x) = 9^{\log_3^x} = x^{\log_3^9} = x^2$

$gof(x) = \log_3^{x^2} = x \log_3^9 = 2x$

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

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$f(x - \frac{1}{x}) = x^2 - 4 + \frac{1}{x^2} + x - \frac{1}{x} \Rightarrow f(x) = x^2 + x$

$t \quad t^2 \quad t$

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$fog(x) = \log_2^{1x - x^2} \qquad D_f = x > 0 \qquad R_g = (-\infty, 14]$

$D_g = \mathbb{R}$

$D_{fog} = \{x \in D_g \mid g(x) \in D_f\} \Rightarrow 1x - x^2 > 0$

$\hookrightarrow (0, 7)$

$(0, 7) \cap (-\infty, 3] = (0, 3]$

$R_{fog(x)} = (-\infty, 4]$

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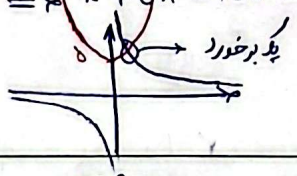
$f(f(x)) = 1 - 2f^2(x) \Rightarrow f(x) = 1 - 2x^2$

$hog(x) = (x-1)^3 + 2(x-1) + 1 = x^3 - 3x^2 + 3x - 1 + 2x - 2 + 1 = x^3 - 3x^2 + 5x - 2$

$x^3 - 3x^2 + 5x - 2 = 1 - 2x^2 \Rightarrow x^3 + 5x - 3 = 0 \Rightarrow x(x^2 + 5) = 3$

$x^2 + 5 = \frac{3}{x}$



۱۰

$if(x, \epsilon) \longrightarrow f(\epsilon) = 4 \longrightarrow g(f(\epsilon)) = 1 \Rightarrow 4a + b = 1 \Rightarrow a \leq 0$