

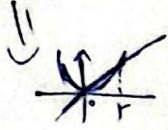
به دلیل ننوشتن اسم منو شما صفر لحاظ می گردد.

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$$f \circ g \Rightarrow a^{\log_b x} \Rightarrow b^{\log_b a^{\log_b x}} \Rightarrow b^{\log_b x^{\log_b a}} \Rightarrow f \circ g = x^{\log_b a} / g \circ f = \log_b a^x = \log_b x^{\log_b a} = \frac{\log_b x}{\log_b b} = \frac{\log_b x}{1} = \log_b x$$

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$$x^2 \leq 2x \Rightarrow (0, 2]$$



$$1, 2 = \text{مجموع صحیح}$$

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

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

$$(2)$$

$$\log_r (1-x-x^2) \Rightarrow 1-x-x^2 > 0 \Rightarrow 0 < x < 1 / \cup f \circ g \Rightarrow A /$$

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$$1-x-x^2 \begin{cases} \nearrow 0 \Rightarrow \log_r = -\infty \\ \searrow 1 \Rightarrow \log_r = 0 \Rightarrow f \end{cases} \Rightarrow (-\infty, 1] = R_{f \circ g} \Rightarrow B /$$

$$A \cap B \Rightarrow (0, 1] \Rightarrow \text{مجموع صحیح}$$

$$(2)$$

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

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

$$(2) \leftarrow \text{ارزش دارد}$$

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$$g \circ f(x) = ax^3 + 2x^2 \Rightarrow g(2) = 1 / x - \frac{2}{x} = 2 \begin{cases} \nearrow x = -1 \\ \searrow x = 2 \end{cases} \Rightarrow$$

$$(1, 5)$$

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$$-a - 2 = 1 \Rightarrow -a = 3 \Rightarrow a = -3$$

$$x = 2 \rightarrow 42a + 1 = 1 \rightarrow a = 0$$