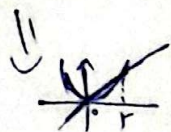


$$f \circ g \Rightarrow a^{\log_b x} \Rightarrow b^{\log_b a^{\log_b x}} \Rightarrow b^{\log_b x^{\log_b a}} \Rightarrow f \circ g = x^{\log_b a} / g \circ f = \log_b a^x = \log_b x^{\log_b a} = \frac{\log_b x}{\log_b b} = \frac{\log_b x}{1} = \log_b x$$

$$x^r \leq rx \Rightarrow (0, 1]$$



$$\hookrightarrow 1, r = \frac{1}{2} \Rightarrow \frac{1}{2}x^{\frac{1}{2}}$$

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

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

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

$$A \cap B \Rightarrow (0, r] \Rightarrow \text{مصحح } x^r$$

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

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

$$\leftarrow \frac{1}{x}, \frac{1}{x^2}, \dots$$

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

$$-a - r = 1 \Rightarrow -a = 1 \Rightarrow \underline{a = -1}$$