

نام و نام خانوادگی: طبق کلاس خواجه پاسخنامه تشریحی تکلیف شماره ۱۱ کلاس: تاریخ: ۱۳۹۵

$$n^3 - \varepsilon \text{ برای } n > a \text{ برابر } n^3 \text{ است} \rightarrow n^3 - \varepsilon \geq 12n - 20 \rightarrow n^3 - \varepsilon n \geq 12n - 14$$

$$n(n+1)(n-2) \geq 1(n-2)$$

$$12n - 20 \text{ برای } n \leq a \text{ برابر } n^3 \text{ است}$$

$$n(n+1)(n-2) - 1(n-2) \geq 0$$

$$(n-2)(n^2 + 2n - 1) \geq 0$$

$$(n-2)(n-2)(n+5) \geq 0$$

$$(n-2)^2(n+5) \geq 0$$

$$+ \text{ ... } \Rightarrow \max 12n - 20 < \min n^3 - \varepsilon$$

$$a > -\varepsilon$$

$$\boxed{n > -\varepsilon} \leftarrow n + \varepsilon \geq 0 \leftarrow \text{همواره نامنفی}$$

$$f(n) = 3n + k$$

$$f^{-1}(v) = \varepsilon \rightarrow f(\varepsilon) = v \rightarrow 3(\varepsilon) + k = v \rightarrow k = -10 \rightarrow f(n) = 3n - 10$$

$$f(v) = 3(v) - 10 = 21 - 10 = 11$$

$$f(f(n)) = 3(3n - 10) - 10 = 9n - 30 - 10 = 9n - 40$$

$$y = \frac{ax}{n-1}, \quad n = \frac{ay}{y-1}$$

$$A(p_a, a) \rightarrow a = \frac{p_a}{p_a - a} \rightarrow a = \frac{p_a}{a} = 2$$

$$ny - n = ay$$

$$ny - ay = n$$

$$y(n-a) = n$$

$$y = \frac{n}{n-a}$$

$$\begin{array}{l} f^{-1} \quad f \\ \omega \rightarrow 3 \rightarrow \omega \\ v \rightarrow 4 \rightarrow v \\ 2 \rightarrow v \rightarrow 2 \\ 4 \rightarrow 9 \rightarrow 4 \end{array}$$

$$\begin{array}{l} f \quad f^{-1} \\ 3 \rightarrow \omega \rightarrow 3 \\ 4 \rightarrow v \rightarrow 4 \\ v \rightarrow 2 \rightarrow v \\ 9 \rightarrow 4 \rightarrow 9 \end{array}$$

$$\begin{array}{l} g^{-1} \quad f \\ 2 \rightarrow 3 \rightarrow \omega \\ 4 \rightarrow 1 \rightarrow x \\ \omega \rightarrow 9 \rightarrow y \end{array}$$

$$\begin{array}{l} f \quad g^{-1} \\ 3 \rightarrow \omega \rightarrow 9 \\ 4 \rightarrow v \rightarrow x \\ v \rightarrow 2 \rightarrow 3 \\ 9 \rightarrow 4 \rightarrow 1 \end{array}$$

$$f \circ f^{-1} = \left\{ (\omega, \omega), (v, v), (2, 2), (4, 4) \right\}$$

$$f^{-1} \circ f = \left\{ (3, 3), (4, 4), (v, v), (9, 9) \right\}$$

$$f \circ g^{-1} = \left\{ (2, \omega), (\omega, 4) \right\}$$

$$g^{-1} \circ f = \left\{ (3, 9), (v, 3), (9, 1) \right\}$$

$$\begin{array}{l} f \circ g^{-1}: 1 \xrightarrow{g^{-1}} 2 \xrightarrow{f} \varepsilon \\ 3 \rightarrow \varepsilon \rightarrow 1 \\ \omega \rightarrow 9 \rightarrow 10 \end{array}$$

$$\frac{h}{f \circ g^{-1}} = \left\{ \left(1, \frac{2}{\varepsilon} \right), \left(3, \frac{\varepsilon}{1} \right), \left(\omega, \frac{1}{10} \right) \right\} = \left\{ \left(1, \frac{1}{\varepsilon} \right), \left(\frac{1}{\varepsilon}, 1 \right), \left(\frac{1}{10}, 1 \right) \right\}$$

$$f \circ g^{-1} = \left\{ \left(1, \varepsilon \right), \left(3, 1 \right), \left(\omega, 9 \right) \right\}$$

$$h = \left\{ \left(1, 4 \right), \left(3, \varepsilon \right), \left(\varepsilon, 1 \right), \left(\omega, 1 \right) \right\}$$

جانب قائم : ۳
جانب اقصی : ۲
نقطہ دلخواہ : $\frac{1}{\sqrt{2}}$

$$g^{-1}(z) = \frac{1}{r} z + r$$

$-1 < \omega \rightarrow$ لا يوجد

$$f^{-1}(u) = \begin{cases} \sqrt{n+1} & n \geq 0 \\ \frac{n+1}{2} & n \leq -1 \end{cases}$$

$$f^{-1}(a) = \frac{-x-1}{x+1} \leadsto \frac{-x-1}{x+1} \times \frac{1}{1} = \frac{-x-1}{1x+1} \Rightarrow b = -1 \quad f^{-1}(-1) = \frac{-(-1)-1}{1(-1)+1} = \frac{1-1}{-1+1} = \frac{0}{0} = \infty$$

$$y = \frac{1 \pm \sqrt{1 - \epsilon_2 r}}{r_m}$$

$$y = \frac{1 - \sqrt{1 - 2\alpha^2}}{2\alpha}$$

$$y = \frac{1 - \sqrt{1 - 2\alpha^2}}{2\alpha}$$