

فرض کنیم $\frac{1}{p}$

$$f(n) = \begin{cases} \mu n - 1 & [n] > \varepsilon \rightarrow \mu n - 1 - \mu n + 1 = 0 \rightarrow \mu n - \frac{\varepsilon}{\mu} \rightarrow -\frac{\varepsilon}{\mu} < a < \frac{\varepsilon}{\mu} \\ \varepsilon n + \mu & [n] \leq \varepsilon \rightarrow a < \omega \rightarrow \varepsilon n + \mu - n + 1 = \mu n + \varepsilon \rightarrow \mu n, \frac{\varepsilon}{\mu} \rightarrow D_f = [-\frac{\varepsilon}{\mu}, \frac{\varepsilon}{\mu}] \end{cases}$$

$$y = \frac{\mu n^{\mu} + \mu \varepsilon n^{\mu} + 1(n + \mu)}{(\varepsilon n + \varepsilon n + 1)^{\mu}} = \frac{\mu (1n^{\mu} + \mu n^{\mu} + n + 1)}{(\mu n + 1)^{\mu}} = \frac{\mu}{\mu n + 1} \rightarrow \mu n \neq -1 \rightarrow n \neq -\frac{1}{\mu}$$

$$D = \mathbb{R} - \left\{ -\frac{1}{\mu} \right\}$$

$$f(n) = \begin{cases} \frac{\mu n^{\mu} + \mu n^{\mu} - n - \mu}{n^{\mu} + 1} & n \neq \pm 1 \\ \frac{\mu n + \mu}{n + b} & n = \pm 1 \end{cases}$$

$\frac{\mu n^{\mu} + \mu n^{\mu} - n - \mu}{n^{\mu} + 1} \rightarrow \frac{\mu(n^{\mu} + n^{\mu}) - (n + \mu)}{n^{\mu} + 1} = \frac{2\mu n^{\mu} - n - \mu}{n^{\mu} + 1}$

$\frac{\mu n + \mu}{n + b} \rightarrow \frac{a + \mu}{b + 1} = \mu \rightarrow \mu b - a = -1$

$\frac{-a + \mu}{b - 1} = 1 \rightarrow b + a = \mu$

$\rightarrow b = \frac{1}{\mu}, a = \frac{1}{\mu}$

$g(n) = \mu n + \mu \frac{n-1}{n-1} \mu$

$c = \mu$

$\rightarrow b + c = \mu + \frac{1}{\mu} = \frac{\mu^2 + 1}{\mu}$

$$g(n) = \frac{(n+1)(n-1)}{(n-1)(a-c)}$$

$\mathbb{R} - \{b, c\}$

$$f(n) = \frac{n+1}{n-c}$$

$$\mathbb{R} - \{1\}$$

$$\rightarrow c = 1$$

$$a^{\mu} + a\mu + b = (n-1)^{\mu} = n^{\mu} - \mu n + 1$$

$$a = -\mu, b = 1, c = 1$$

$$a + b + c = 0$$

$$f(n) = (n-1)^{\mu} (n-1) \xrightarrow{f(x+1)} (n-1)^{\mu} (n) + (-n-1)^{\mu} (-1) = n^{\mu} - \varepsilon n^{\mu} + \varepsilon n^{\mu} - \varepsilon n^{\mu}$$

$\xrightarrow{f(1-n)} (n^{\mu} - \varepsilon n + \varepsilon) \times f(n^{\mu} + \varepsilon n + \varepsilon) (1-n)$

$\boxed{-\frac{1}{\mu} n^{\mu}}$

$$1 - \mu n = -1 \rightarrow n = 1$$

$$1 - \mu n = \mu \rightarrow n = -1$$

$$\frac{f(-1) + f(\mu)}{\varepsilon} = \varepsilon + 1 = \omega$$

$$a + \sqrt{a} = 4 \rightarrow \sqrt{a} = 4 - a \xrightarrow{\text{Potenzieren}} a = 16 + a^2 - 8a \rightarrow a^2 - 8a + 16 = 0 \rightarrow a = 4 \checkmark$$

(2) (1)

$$f(4) = 4 + 16 = 20 \checkmark$$

$$f(a-1) = (a-1)^k + (a-1)$$

$$f(1-m) = (1-m)^k + 1-m = (m-1)^k - (m-1) = 0 \checkmark$$

(2) (1)

$$\left. \begin{array}{l} \varepsilon a - 13a \geq 0 \rightarrow a \geq \frac{13}{\varepsilon} \\ b - \varepsilon a \geq 0 \rightarrow a \leq \frac{b}{\varepsilon} \end{array} \right\} \cap \left[\frac{13}{\varepsilon}, \frac{b}{\varepsilon} \right] \rightarrow \frac{13}{\varepsilon} = 1 \rightarrow a = \varepsilon$$

$$\hookrightarrow \frac{b}{\varepsilon} = 1 \rightarrow b = \varepsilon$$

(2) (4)

$$1 - 13a = 0 \rightarrow \sqrt{\varepsilon - 13a} \rightarrow f(1) = k - 1$$

$$b - \varepsilon = 0 \rightarrow \sqrt{b - \varepsilon} \rightarrow g(1) = 13k$$

$$(f - g)(1) = k \rightarrow 1(k - 1) - 13k = k \rightarrow k = -1 \checkmark$$

$$13a - \frac{b}{13} - k = \varepsilon - 1 + 1 = 1 \checkmark$$

$$\left. \begin{array}{l} 13n + 13 \geq 0 \rightarrow n \geq -1 \\ m - n \geq 0 \rightarrow m \geq n \end{array} \right\} \mathcal{D}_{f,g} = \begin{bmatrix} -1, 0 \\ -1, m \end{bmatrix} \rightarrow m = 0 \checkmark$$

(2) (10)

$$f(x) = \sqrt{x-1} + x = \sqrt{\varepsilon+x} = 1+x$$

$$g(x) = 1\sqrt{x} - 1\sqrt{x}$$

$$\rightarrow (f - g)(x) = 1\sqrt{x} \rightarrow 1n + 1\sqrt{x} = 1\sqrt{x} \rightarrow n = 1\sqrt{x} \checkmark$$

$$m+n = \boxed{1 + 1\sqrt{x}} \checkmark$$