

(16), 16.

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

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

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

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

$\sim \frac{\alpha + \mu}{b + 1} = \mu \rightarrow \mu b - \alpha = -1$
 $\sim \frac{-\alpha + \mu}{b - 1} = 1 \rightarrow b + \alpha = \mu$
 $\rightarrow b = \frac{1}{\mu}, \alpha = \frac{\mu}{\mu}$
 $\rightarrow b + c = \mu + \frac{1}{\mu} = \mu(1 + \frac{1}{\mu})$

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

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

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

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

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

$$\hookrightarrow c = 1$$

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

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

$$\alpha + b + c = 0$$

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

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

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

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

$$a + \sqrt{a} = f \rightarrow \sqrt{a} = 4 - a \xrightarrow{\text{Potenzieren}} a = 16 + a^2 - 8a \rightarrow a^2 - 8a + 16 = 0 \rightarrow a = 4 \checkmark \quad (9)$$

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

$\hookrightarrow a = 4$ ist Grenzwert
ist

$$\begin{aligned} f(a-1) &= (a-1)^k + (a-1) \\ f(1-m) &= (1-m)^k + 1-m = (m-1)^k - (m-1) = 0 \end{aligned} \quad (11)$$

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

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

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

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

$$(f - g)(1) = k \rightarrow 1(k - 1) - 1/k = k \rightarrow k = -1$$

$$1/a - \frac{b}{1} - k = \varepsilon - 1 + 1 = 0$$

$$\left. \begin{aligned} kn + 1 &\geq 0 \rightarrow n \geq -1 \\ m - n &\geq 0 \rightarrow m \geq n \end{aligned} \right\} \Rightarrow \begin{aligned} &[-1, 0] \\ &[-1, m] \end{aligned} \rightarrow m = 0 \quad (10)$$

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

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

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

$$m+n = \boxed{a + n\sqrt{p}}$$