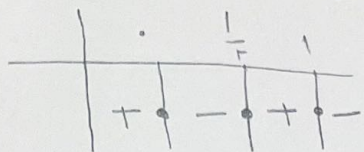


★ ملینہ جیسی ★

$$f(n) = \sqrt{\frac{n-1}{n} - \frac{n}{n-1}} \rightarrow \frac{n-1}{n} - \frac{n}{n-1} \rightarrow \frac{(n-1)^2 - n}{n(n-1)} = \frac{1-2n}{n(n-1)} \rightarrow n \neq 0, 1 \quad (1)$$



$$D = (-\infty, 0) \cup [\frac{1}{2}, 1)$$

$$f(n) = \frac{1}{n+1} - \frac{r}{n} \rightarrow n \neq 1, -2, -1, 0$$

$$R = \left\{0, -1, 1, -2, -\frac{\Delta}{\epsilon}\right\}$$

$$\frac{r}{n-1} + \frac{1}{n+2} \rightarrow \frac{r(n+2)}{(n+2)(n-1)} + \frac{1(n-1)}{(n+2)(n-1)} = \frac{rn+4+n-1}{(n+2)(n-1)} \Rightarrow \epsilon n + \Delta = 0 \rightarrow n \neq -\frac{\Delta}{\epsilon}$$

$$f(n) = \sqrt{\left[\left(\frac{1}{r}\right)^n - 9\right](rr - \epsilon^n)} \rightarrow (r^{-n} - 9)(rr - \epsilon^n) \geq 0$$

(2)

$$r^{-n} - 9 = 0 \rightarrow r^{-n} = 9 \rightarrow -n = 2 \rightarrow n = -2$$

$$rr - \epsilon^n = 0 \rightarrow \epsilon^n = rr \rightarrow r^{rn} = r^{\Delta} \rightarrow rn = \Delta \rightarrow n = \frac{\Delta}{r}$$

$$D = (-\infty, -2] \cup \left[\frac{\Delta}{r}, +\infty\right)$$

$$\sqrt{n-1} + \sqrt{y+1} = r \rightarrow n-1 \geq 0 \rightarrow n \geq 1$$

$$y+1 \geq 0 \rightarrow y \geq -1$$

$$\sqrt{y+1} = r \rightarrow y = r^2 - 1$$

$$\sqrt{n-1} = r \rightarrow n = r^2 + 1$$

$$0 \leq \sqrt{n-1} \leq r \rightarrow 1 \leq n \leq r^2 + 1 \rightarrow D = [1, r^2 + 1]$$

$$n^r - 1 \geq 0 \rightarrow n^r \geq 1 \rightarrow n \geq 1$$

$$f(n) = \frac{\log_e(n^r - n - r)}{\sqrt{n^r - 1} + 1}$$

(3) دامنه تابع با ضابطه

$$\sqrt{n^r - 1} + 1 \neq 0 \rightarrow \sqrt{n^r - 1} \neq -1$$

$$n^r - n - r > 0 \rightarrow n^r - n - r = (n+1)(n-r) > 0$$

$$n-r > 0 \rightarrow n > r$$

$$n+1 < 0 \rightarrow n < -1$$

$$D_f = (-\infty, -1) \cup (r, +\infty)$$

$$\sqrt{r+an-n^r} \quad [-r, b] \quad a+b=?$$

$$r+an-n^r \geq 0 \rightarrow n^r - an - r \leq 0$$

$$n = \frac{a \pm \sqrt{a^2 + 4r}}{r} \rightarrow n_{\min} = \frac{a - \sqrt{a^2 + 4r}}{r} = -2 \rightarrow a - \sqrt{a^2 + 4r} = -2 \rightarrow \sqrt{a^2 + 4r} = a + 2$$

$$a^2 + 4r = (a+2)^2 \rightarrow a^2 + 4r = a^2 + 4a + 4 \rightarrow 4a + 4 = 4r \rightarrow a = r - 1$$

$$\frac{a + \sqrt{a^2 + 4r}}{r} = \frac{-\frac{1}{r} + \sqrt{\left(-\frac{1}{r}\right)^2 + 4r}}{r} = \frac{-0.1\Delta + r/\Delta}{r} = \frac{r}{r} = 1/\Delta = b$$

$$a+b = \frac{r}{r} - \frac{1}{r} = \frac{r-1}{r} = 1 \leftarrow$$

$$f(n) = \begin{cases} r^n - r & n \geq 1 \\ r^n + r & n < 1 \end{cases}$$

ملک کا محمد حسینی

$$g(n) = \sqrt{f(n) - n} \rightarrow f(n) - n \geq 0 \rightarrow f(n) \geq n$$

$$r^n - r - n = r^n - r \geq 0 \rightarrow r^n \geq r \rightarrow n \geq 1$$

$$r^n + r - n = n + r \geq 0 \rightarrow n \geq -r \rightarrow D_2[-r, +\infty)$$

$$f(n) = \begin{cases} (a+1)(n+r) & n \geq 1 \\ ra + r^n & n \leq 1 \end{cases}$$

$$rf(\Delta) = f(-r) + a \rightarrow a = ?$$

$$f(\Delta) = (a+1)(\Delta+r) = v(a+1) = va + v$$

$$f(-r) = ra + r(-r) = ra - r$$

$$r(va + v) = ra - r + a \rightarrow 1(a+1)r = ra - r + a \rightarrow 10a = -10 \rightarrow a = -\frac{10}{10} \rightarrow a = -1$$

$$f(n) = \sqrt{n} + \frac{1}{\sqrt{n}} + r$$

$$f\left(\frac{r-\sqrt{r}}{a}\right) + f\left(\frac{r+\sqrt{r}}{b}\right) = ? \rightarrow s = \sqrt{a}, t = \sqrt{b} \rightarrow t = \frac{1}{s}$$

$$ab(r-\sqrt{r})(r+\sqrt{r}) = r - r = 0$$

$$a^r + b^r = r$$

$$s + t = s + \frac{1}{s}$$

$$f(a) + f(b) = \left(s + \frac{1}{s} + r\right) + \left(t + \frac{1}{t} + r\right) = (s+t) + \left(\frac{1}{s} + \frac{1}{t}\right) + r$$

$$f(a) + f(b) = r\left(s + \frac{1}{s}\right) + r$$

$$s^r = a, t^r = b$$

$$(s+t)^r = s^r + r s^{r-1} t + t^r = a + r + b \rightarrow (r-\sqrt{r}) + r + (r+\sqrt{r}) = 4$$

$$s + \frac{1}{s} = \frac{1}{4}$$

$$f(r-\sqrt{r}) + f(r+\sqrt{r}) = \frac{r-\sqrt{r}}{4} + \frac{r+\sqrt{r}}{4}$$

$$rf(n) - rf(-n) = \varepsilon n^r - n \rightarrow \begin{cases} rf(-n) - rf(n) = \varepsilon n^r + n \\ rf(n) - rf(-n) = \varepsilon n^r - n \end{cases}$$

$$f(n) = \frac{\varepsilon n^r - n}{2}$$

$$(n+r)f(n) - rf(n+r) = \varepsilon n^r - n + r^n - 1$$

$$f(-n) = \frac{\varepsilon n^r + n}{2}$$

$$(10+r)f(0) - rf(0+r) = \varepsilon(0)^r - 0 + r^n - 1$$

$$f(0) = ?$$

$$rf(0) = 0 = r^n - 1 \rightarrow f(0) = \frac{r^n - 1}{r}$$

$$f(n) + f\left(\frac{1}{n}\right) = \frac{r^n - 1}{n} + r$$

$$f(-1) = ?$$

$$(an+b) + \left(a\frac{1}{n} + b\right) = an + \frac{a}{n} + r$$

$$f(n) + f\left(\frac{1}{n}\right) = r^n - 1 + \frac{r}{n} \rightarrow a = r, b = -1 \rightarrow b = -4$$

$$f(n) = r^n - 4 \rightarrow f(-1) = r(-1) - 4 = -r - 4 = -9$$