

✓ لکړه دواړه هم دقت

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$$y = \sqrt{p(n) - n + 1}$$

$$p(n) = \begin{cases} pn-1 & [n] \geq 2 \text{ و } n \geq \omega \\ pn+p & [n] \leq p \text{ و } n < \omega \end{cases} \quad -1$$

$$I) n \geq \omega \rightarrow pn-1-n+1 \geq 0 \quad n \geq 0 \xrightarrow{n} n \geq \omega$$

$$II) n < \omega \rightarrow pn+p-n+1 \geq 0 \quad pn+p \geq 0 \quad n \geq -\frac{p}{p} \xrightarrow{n} -\frac{p}{p} \leq n < \omega$$

$$(I) \cup (II) = \left[-\frac{p}{p}, +\infty\right)$$

$$10 \quad \frac{p^2 n^2 + p^2 n + 1}{(p^2 n + p^2 n + 1)^2} = \frac{p(pn+1)^2}{(pn+1)^2} = \frac{p}{pn+1}$$

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

$$15 \quad f(n) = \begin{cases} \frac{n^2 + p^2 n - n - p}{n^2 - 1} = \frac{(n+p)(n^2-1)}{n^2-1} & n+p \quad n \neq \pm 1 \\ \frac{an+p}{n+b} & n = \pm 1 \end{cases} \quad -p$$

$$g(n) = n+c$$

$$b+c = r \frac{1}{r} = \frac{\omega}{r}$$

$$20 \quad f(p) = n+p = p$$

$$g(p) = p+c = p \rightarrow c = 0$$

$$25 \quad \begin{cases} f(1) = \frac{a+p}{b+1} = p \\ g(1) = p \end{cases} \quad \begin{cases} a+p = pb + p \\ p-a = b-1 \end{cases} \quad \begin{cases} p = pb + p \\ pb = p \\ b = \frac{1}{p} \end{cases}$$

$$f(x) = \frac{x+1}{x-c} = g(x) = \frac{x^r-1}{x^r+ax+b} \quad a+b+c = 0$$

$$\frac{x+1}{x-c} = \frac{(x+1)(x-1)}{x^r+ax+b} \rightarrow x^r - (c+1)x + c = x^r + ax + b$$

$$\begin{aligned} -c-1 &= a & a &= -b-1 & \rightarrow & a = -r \\ b &= c & & & & c = 1 \end{aligned}$$

$$\text{if } x^r+ax+b \quad \Delta = 0 \rightarrow x^r - r b = 0$$

$$b^r + r b + 1 - r b = 0 \quad b^r - r b + 1 = 0 \quad (b-1)^r = 0 \rightarrow b = 1$$

$$f(x) = (x-r)^r (x-1)$$

$$g(x) = f(x+1) + f(1-x) = ? = (x-r)^r (x) + (-x-r)^r (-x)$$

$$x(x^r - rx + r) + (-x)(x^r + rx + r) =$$

$$x^r - rx^r + rx - x^r - rx^r - rx - r = -2rx^r$$

$$f(1-x) = \begin{cases} \sqrt{x} + r & x \leq 0 \\ r\sqrt{x} & x > 0 \end{cases}$$

$$f(-1) + f(r) = ?$$

$$r+1 = 0$$

$$1-rx = -1 \rightarrow rx = r \quad x=1 \rightarrow \sqrt{1} = r$$

$$1-rx = r \rightarrow rx = -r \quad x=-1 \rightarrow \sqrt{-1} + r = r-1 = -1$$

$$f(x+\sqrt{x}) = x^r + rx = r^r + r(r) = r^r + 1r = 2r^r$$

$$f(4) = ?$$

$$x+\sqrt{x} = 4 \quad \sqrt{x} = t \rightarrow t^2+t-4=0$$

$$(t-r)(t+r) = 0$$

$$\rightarrow \sqrt{x} = t = r \rightarrow x = r$$

$$t=r \quad t=-r \quad X$$

جواب

$$f(x) = x^2 + x$$

$$f(x-1) + f(1-x) = ?$$

$$(x-1)^2 + x-1 + (1-x)^2 + 1-x =$$

$$\cancel{x^2-1} - \cancel{x^2} + \cancel{x} - 1 + \cancel{1-x^2} - \cancel{x} + \cancel{1-x^2} = 0$$

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

$$f-g = \{(1, k)\} \quad (1, k) \quad 1$$

$$g(x) = \sqrt{b-x} + k$$

$$Df = x-a \geq 0$$

$$x \geq \frac{a}{k} \quad a$$

$$\text{condition } \frac{a}{k} = 1$$

$$Dg = b-x \geq 0$$

$$x \leq \frac{b}{k}$$

$$\downarrow \frac{a}{k} = \frac{b}{k} = 1$$

$$\downarrow a = \frac{k}{k} \quad b = k$$

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$$f(1) = k-1 \quad g(1) = k$$

$$f-g = k-1-k = -1 = k \rightarrow k = -1$$

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$$ka - \frac{b}{k} - k = k\left(\frac{k}{k}\right) - \frac{k}{k} - (-1) = k - 1 + 1 = k$$

$$f(x) = \sqrt{m-x} + n$$

$$Df \times g = Df \cap Dg$$

$$g(x) = \sqrt{x+r}$$

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$$Df \Rightarrow m-x \geq 0$$

$$x \leq m$$

$$[-1, m] = [-1, v]$$

$$Dg \Rightarrow x+r \geq 0$$

$$x \geq -1$$

$$\downarrow m = v$$

$$f-g(x) = \sqrt{v-x} + n - \sqrt{x} = v+n - \sqrt{x} = 4\sqrt{v}$$

$$n = 4\sqrt{v} - v$$

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$$m+n = 4\sqrt{v} - v + v = 4\sqrt{v} + 0$$