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$$[x] \geq 4 \rightarrow \sqrt{x} = y \quad / \quad [x] \leq 4 \rightarrow x \in [1, 16] \quad \checkmark$$

$$U \rightarrow D_y = [-\frac{1}{2}, +\infty)$$

$$\frac{r(1n^r + 12n^r + 4n+1)}{(r+1)^r} = \frac{r(r+1)^r}{(r+1)^r} = \frac{r}{r+1} \checkmark \neq 0$$

$$\rightarrow D_f = (-\infty; \frac{1}{r}) \cup (\frac{1}{r}; +\infty)$$

$$\left. \begin{aligned} g(1) &= f(1) \rightarrow r = \frac{a+r}{b+1} \\ g(-1) &= f(-1) \rightarrow 1 = \frac{r-a}{b-1} \end{aligned} \right\} \begin{aligned} r(b+r) &= a+r \\ b-1 &= r-a \end{aligned} \rightarrow b \neq \frac{1}{r}$$

$$f(0) = r \rightarrow g(0) = r \rightarrow c = r \rightarrow b+c = \boxed{r, d}$$

$$\frac{(n+1)(n-1)}{n^2+an+b} = \frac{n+1}{n-c} \rightarrow (n-1)(n-c) = n^2+an+b \rightarrow \underline{b \leq c} \quad / \quad \underline{a \leq -c-1}$$

$$\rightarrow D_f = \mathbb{R} - \{c\} \rightarrow [1; c] \cup [c; 1] \rightarrow n^2+an+b \leq (n-1)^2$$

$$\rightarrow \underline{c \leq 1} \rightarrow 1-1+1-1 \leq \checkmark$$

$$\left. \begin{aligned} f(1-n) &= (-n-1)^r(-n) = -n^r - rn^r - rn \\ f(1+n) &= (n-1)^r(n) = n^r - rn^r + rn \end{aligned} \right\} f(1-n) + f(1+n) = g(n) = -1n^r$$

$$\left. \begin{array}{l} 1 - \sqrt{x} = -1 \leadsto \sqrt{x} = 1 \leadsto f(-1) = \sqrt{x} \\ 1 - \sqrt{x} = 3 \leadsto \sqrt{x} = -1 \leadsto f(x) = 1 \end{array} \right\} \rightarrow f(-1) + f(1) = \sqrt{x} + 1 = 0$$

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$$\sqrt{x} + \sqrt{x} = 4 \leadsto \sqrt{x} = 2 \leadsto x = 4$$

$$\leadsto f(4) = \sqrt{x} + 1 = 2 + 1 = 3$$

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

$$\downarrow \quad \downarrow$$

$$t(t+1) + (-t(t+1)) = 0$$

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$$\left. \begin{array}{l} b - \sqrt{x} \geq 0 \rightarrow x \leq \frac{b^2}{4} \\ \sqrt{x} - a \geq 0 \rightarrow x \geq a^2 \end{array} \right\} \mid \frac{1}{4}a \leq x \leq \frac{b^2}{4}$$

$$\frac{1}{4}a \leq 1 \rightarrow a \leq 2 \mid \frac{b^2}{4} \leq 1 \rightarrow b \leq 2 \leadsto f(1) - g(1) = k \rightarrow 1 - 1 = k \rightarrow k = 0$$

$$\rightarrow a - b = k = 0$$

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$$\left. \begin{array}{l} \sqrt{x} + \sqrt{y} = 1 \rightarrow \sqrt{x} = 1 - \sqrt{y} \\ m - \sqrt{x} = 0 \rightarrow \sqrt{x} = m \end{array} \right\} \rightarrow D_{f \circ g}[-1, 1] \rightarrow m = 1$$

$$f(x) - g(x) = 4\sqrt{x} \rightarrow 1 + m - 4\sqrt{x} = 4\sqrt{x} \leadsto m = 8\sqrt{x} - 1$$

$$\left. \begin{array}{l} \end{array} \right\} m + n = 2 + 1\sqrt{x}$$

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