

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

$$f(-1) + f(r) = ? \quad \leadsto \quad r+1 = \boxed{0}$$

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$$f(-1) \Rightarrow 1-\sqrt{n} = -1 \rightarrow n = 1 \Rightarrow \sqrt{n} = 1$$

$$f(r) \Rightarrow 1-\sqrt{n} = r \rightarrow n = -1 \Rightarrow \sqrt{-1} \neq r$$

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

$$f(4) = ? \quad r^r + r \cdot r = r \cdot 4 + 1r = \boxed{15}$$

(r) 7

$$n + \sqrt{n} = 4 \Rightarrow \sqrt{n} = 4 - n \Rightarrow n = r^2 + n^r - 1r^r$$

$$n^r - 1r^r + r^2 = 0 \quad (n-r)(n-r) = 0$$

$$\text{if } n = r \Rightarrow r + \sqrt{r} = 4 \quad \checkmark$$

$$\text{if } n = 4 \Rightarrow 4 + \sqrt{4} = 15 \quad \times$$

$$f(n) = n^r + n$$

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

$$\Rightarrow (n-1)^r + n-1 = n^r + n - r^r - 1 - n - 1$$

$$\Rightarrow (-n+1)^r + 1-n = 1 - n^r - r^r + r^r + 1 - n$$

$$n^r + r^r - r^r - 1 - n - 1 + 1 - n^r - r^r + r^r + 1 - n \Rightarrow \boxed{0}$$

$$f(n) = \sqrt{r_n - r_a} + k - 1 \quad r_n - r_a \geq 0$$

$$-r_a \geq -r_n \Rightarrow n \geq \frac{r_a}{r} \quad n=1 \Rightarrow \frac{r_a}{r} = 1 \Rightarrow a = \frac{r}{2}$$

$$g(n) = \sqrt{b - r_n} + r_k \quad b - r_n \geq 0 \rightarrow n \leq \frac{b}{r}$$

$$n=1 \Rightarrow \frac{b}{r} = 1 \Rightarrow b = r$$

$$f \cdot g = f(1, k) \quad f(1) - g(1) = r_k - r - r_k = -k - r$$

$$k = -1$$

$$r_a - \frac{b}{r} - k = ?$$

$$r_a - \frac{b}{r} - k = r \cdot \frac{r}{r} - r - (-1) = \boxed{0}$$

$$f(n) = \sqrt{m-n} + n = m-n \geq 0 \quad n \leq m \quad m \in D_f \cap [1, \infty)$$

$$g(n) = \sqrt{r_n + r} \Rightarrow r_n + r \geq 0 \quad n \geq -1$$

$$D_{f \cdot g} = [-1, \infty)$$

$$f \cdot g(r) = 9\sqrt{r}$$

$$m+n = ?$$

$$f(r) - g(r) = \sqrt{r-r} + n - \sqrt{r+r} = r+n - r\sqrt{r} \pm 9\sqrt{r}$$

$$n = 1\sqrt{r} - r$$

$$m+n = 1\sqrt{r} - r + \sqrt{r} = \boxed{\sqrt{r} + \sqrt{r}}$$

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