

$$1 - \sqrt{x} = -1 \rightarrow x = 1 \rightarrow \sqrt{x} = 1 \checkmark$$

$$1 - \sqrt{x} = 3 \rightarrow x = -1 \rightarrow \sqrt[3]{-1} + 1 = 1 \checkmark$$

$$f(-1) + f(3) = 1 + 1 = 2 \checkmark$$

$$f(x + \sqrt{x}) = x^2 + 3x$$

~~find~~

$$\sqrt{x} = t \rightarrow t^2 + t = 4 \rightarrow t^2 + t - 4 = 0 \rightarrow (t+3)(t-1) = 0$$

$$f(4) = f(t + \sqrt{t}) = (t)^2 + 3(t) = 25 + 12 = 37 \checkmark$$

$$\sqrt{x} = 1 \leftarrow$$

$$t = 1 = \sqrt{x}$$

$$t = 3 \neq \sqrt{x}$$

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

$$f(x-1) + f(1-x) = (x-1)^2 + x-1 + (1-x)^2 - x+1 = 0 \checkmark$$

تساوی برقرار است

$$g = \sqrt{b - \sqrt{x}} + 3k \rightarrow b - \sqrt{x} \geq 0 \rightarrow x \leq \frac{b^2}{9}$$

$$f = \sqrt{3x - 3a} + k - 1 \rightarrow 3x - 3a \geq 0 \rightarrow x \geq \frac{3a}{3}$$

$$f = g = k \xrightarrow{x=1} 2\sqrt{3-3a} + 3k - 1 = \sqrt{b-3} + 3k \rightarrow 3k = k \rightarrow 2\sqrt{3-3a} - \sqrt{b-3} = 2k$$

$$\frac{a}{b} \rightarrow 0 + 0 - 2 = 2k \rightarrow k = -1 \checkmark$$

$$D_{f \circ g} = D_f \cap D_g \rightarrow D_g = [-1, +\infty), D_f = (-\infty, m]$$

$$f(x) = \sqrt{m-x} + n \rightarrow x \leq m \Rightarrow m \leq 1 \checkmark$$

$$g(x) = \sqrt{3x+2} \rightarrow 3x+2 \geq 0 \rightarrow x \geq -\frac{2}{3}$$

$$f(1) - g(1) = 1 - 1 = 0 = \sqrt{1-2} + n = 1 + n \rightarrow n = -1 \checkmark$$

$$\begin{cases} m+n = 1-2+3\sqrt{2} \\ m+n = 2+3\sqrt{2} \end{cases}$$

2
4

2
✓

2
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2
9

1, 1, 1, 1