

$$\frac{-\frac{r}{3}}{x} \quad \checkmark \quad \infty$$

$$\sqrt{r+3x} \quad \sqrt{x}$$

$$x \geq 0$$

$$r+3x \geq 0$$

$$3x \geq -r$$

$$x \geq -\frac{r}{3}$$

$$r x - 1 - x + 1 = x$$

$$r x + 3 - x + 1 = r + 3x$$

$$D_f = \left[-\frac{r}{3}, +\infty \right)$$

(۲)

$$\frac{(f x^r + f x + 1)(f x + 3)}{(f x^r + f x + 1)^r} = \frac{f x + 3}{f x^r + f x + 1} = \frac{3(f x + 1)}{(f x + 1)^r} = \frac{3}{f x + 1}$$

$$f x^r + f x + 1 \neq 0$$

$$(f x + 1)^r \neq 0$$

$$x \neq -\frac{1}{f}$$

$$D_f = \mathbb{R} - \left\{ -\frac{1}{f} \right\}$$

سه شذ عبارت هم می خواستیم

(1, 2)

$$\frac{(x^r - 1)(x + r)}{x^r - 1} = x + r$$

$$g(x) = x + c = x + r$$

$$c = r$$

(۲)

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

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

$$r = r + f b$$

$$b + c = r + \frac{1}{f} = \frac{a}{r}$$

$$r = f b$$

$$a + r = r + f b$$

$$-a + r = -1 + b$$

$$b = \frac{1}{f}$$

$$x^r + a x + b = (x - c)^r$$

$$(x - 1)^r = x^r - r x + 1 = x^r + a x + b$$

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

$$a = -r \quad b = 1$$

$$x - c = x - 1$$

$$a + b + c = -r + 1 + 1 = 0$$

$$c = 1$$

(۲)

$$f(x+1) \rightarrow (x-r)^r(x) = (x^r - f x + f)(x) = x^r - f x^r + f x$$

$$f(1-x) \rightarrow (-r-x)^r(-x) = (x^r + f x + f)(-x) = -x^r - f x^r - f x$$

$$x^r - f x^r + f x - x^r - f x^r - f x = -1 x^r$$

(۲)

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

$$-\sqrt{x} = \sqrt{x}$$

$$x = -1$$

$$f(\sqrt{x}) = \sqrt[3]{-1} + \sqrt{x} = 1 \checkmark$$

(r)

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

$$-\sqrt{x} = -2$$

$$x = 4$$

$$f(-1) = \sqrt[3]{-1} = -1 \checkmark$$

$$f(\sqrt{x}) + f(-1) = \sqrt{x} + 1 = 2 \checkmark$$

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$$x + \sqrt{x} = 9$$

$$x = 4 \checkmark$$

$$f(9) = \sqrt[3]{9} + 1 \checkmark = 2 \checkmark$$

(r)

V

$$x-1 = t$$

$$1-x = -t$$

$$f(t) = t^3 + t$$

$$f(-t) = -t^3 - t$$

$$f(x-1) + f(1-x) = f(t) + f(-t) = t^3 + t + (-t^3 - t) = 0 \checkmark$$

(r)

A.

$$f(x) = \sqrt{x-2a} + k - 1$$

$$a = \frac{1}{2} \checkmark$$

$$g(1) = \sqrt{b-2} + k$$

$$b = 2 \checkmark$$

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

$$-1 = k$$

$$k = -1 \checkmark$$

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

(r)

9

$$x + 2 \geq 0$$

$$x \geq -2$$

$$x \geq -1$$

$$m - x \geq 0$$

$$m \geq x$$

$$V \geq x$$

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

$$f(x) = x + n$$

$$x + n - \sqrt{x} = 9\sqrt{x}$$

$$n = 8\sqrt{x} \checkmark$$

$$m = V \checkmark$$

$$m + n = 8\sqrt{x} + V = 9\sqrt{x} \checkmark$$

(r)

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