

۱۵۱۲۵

نام و نام خانوادگی آراز نیک‌مالی پاسخنامه تشریحی تکلیف شماره ۴ کلاس پایه نهم A

الف) $f(x) = \sqrt{\frac{x-1}{x} - \frac{x}{x-1}}$ $\frac{-2x+1}{x(x-1)} \geq 0$ $\frac{0}{\frac{1}{x} - \frac{1}{x-1} + \frac{1}{x-1}}$ $D_f = (-\infty, 0) \cup (\frac{1}{2}, 1)$ ✓ (۲)

ب) $f(x) = \frac{\frac{1}{x+1} - \frac{2}{x}}{\frac{2}{x-1} + \frac{1}{x+2}}$ $\frac{\frac{x-2x-2}{x(x+1)}}{\frac{2x+2}{(x-1)(x+2)}} \rightarrow 0, -2$ $D_f = \mathbb{R} - \{-\frac{2}{5}, -1, 0, 1, -\frac{5}{2}\}$ ✓

الف) $\rightarrow D_f = (-\infty, -2] \cup [\frac{5}{2}, +\infty)$ راه حل؟ (۵/۲۵)

ب) $\rightarrow D_f = x \rightarrow x \geq 1$ $y \geq -1$ ✓

$f(x) = \frac{\log(x^2-x-2)}{\sqrt{x^2-1}+1}$ $x^2-x-2 > 0$ $\frac{-1}{+1} - \frac{2}{1+}$ $(x-2)(x+1) > 0$ $(-\infty, -1) \cup (2, +\infty)$ ✓
 $x^2-1 \geq 0 \rightarrow x^2 \geq 1 \rightarrow x \geq 1 \vee x \leq -1$

$\sqrt{-x^2+2x+3}$ $\Delta \rightarrow \frac{a \pm \sqrt{a^2+4r}}{2} = -2 \rightarrow a = -\frac{1}{2}$ $\boxed{a+b=1}$ ✓
 $[-2, b] \rightarrow \beta$ $\rightarrow b = \frac{a + \sqrt{a^2+4r}}{2} = \frac{2}{2}$
 $-(x+2)(x-\beta) \leq (x+(-\frac{1}{2}))^2 - \frac{1}{4} \leq -(x^2-2x+3)$

~~فصل ۱۸~~
 $f(x) - x \geq 0 \rightarrow x \geq 1 \rightarrow x^2-x-2 \geq x \rightarrow x^2-2x-2 \geq 0 \rightarrow x \geq 1 \vee x > 1 \rightarrow x > 1$
 $f(x) \geq x \rightarrow x < 1 \rightarrow x^2+x \geq x \rightarrow x \geq -2 \rightarrow x \leq 1 \rightarrow [-2, 1]$ **دقت!**
 $\rightarrow D_f = [-2, +\infty)$ ✓ (۲)

$$2f(0) = f(-2) + a$$

$$2(a+1)(0) = 2a - 8 + a \rightarrow a = -11 \quad \checkmark$$

(2)

6

$$\sqrt{x} + \frac{1}{\sqrt{x}} + 2$$

کامل تر بنویس

$$f(2-\sqrt{c}) + f(2+\sqrt{c}) = 2(\sqrt{2+\sqrt{c}} + \sqrt{2-\sqrt{c}}) + c \quad \checkmark \rightarrow 2\sqrt{4} + 4$$

$$\hookrightarrow A^2 = 4 \rightarrow A = \sqrt{4}$$

(1, 1.5)

7

$$2f(n) - 2f(-n) = 8n^2 - n$$

$$\frac{2}{3}(2f(-n) - 2f(n) = 8n^2 + n)$$

$$2f(-n) - 8n^2 = 4n^2 + 1.5n \quad \checkmark$$

$$2f(n) = 10n^2 + 1.5n$$

$$f(n) = \frac{10n^2 + 1.5n}{2} = 5n^2 + \frac{3}{4}n \quad \text{رفت!} \quad \left(-8n^2 + \frac{8}{n} \right) - \frac{1}{5}n$$

(1, 1.5)

8

$$(n+2)f(n) - 2nf(n+2) = 8n^2 - mn + 3m - 1$$

$$f(0) = \frac{10}{8} \quad \checkmark$$

راه حل ؟

(1.5)

9

$$an + \frac{a}{n} + 2b = 3n - 12 + \frac{3}{n} \quad \checkmark$$

$$\rightarrow a=3 \quad \checkmark$$

$$b=-6 \quad \checkmark$$

$$f(n) = 3n - 4$$

$$\rightarrow f(n) = -3n + 6$$

فرض

$$\rightarrow f(1) = -9$$

$$\checkmark$$

چجوری از این

$$f(1) = -9$$

شده ؟

(1, 1.5)

10