

فرام فرزند
تکلیف شما را در
تلاش دوار (نام) چهره

$$\left. \begin{aligned} f(a) + a f(-a) &= r|a| + 1 \\ f(-a) - a f(a) &= r|a| + 1 \end{aligned} \right\} \rightarrow f(-a) = r|a| + a f(a) + 1 \quad (1)$$

$$f(a) + a(r|a| + a f(a) + 1) = r|a| + 1$$

$$f(a) + ar|a| + a^2 f(a) + a = r|a| + 1$$

$$f(a) + (a^2 + 1) + a - 1 = r|a| - a \cdot r|a|$$

$$(1 + a^2) f(a) = \frac{r|a|(1-a) + (1-a)}{1 + a^2}$$

$$f(a) = \frac{(1-a)(r|a| + 1)}{1 + a^2}$$

میانگاری
a=0

$$\left. \begin{aligned} f(a) + f(0) &= a^2 - 5a + 9 \\ f(0) + f(0) &= 9 \rightarrow 2f(0) = 9 \end{aligned} \right\} \rightarrow f(0) = \frac{9}{2}$$

$$\rightarrow f(a) = a^2 - 5a + \frac{9}{2} \rightarrow f(a^2) = a^4 - 5a^2 + \frac{9}{2}$$

(3)

$$y = \frac{a^2 + a + 1}{a - 1} \rightarrow y(a - 1) = a^2 + a + 1 \rightarrow a^2 + (1-y)a + y + 1 = 0$$

$$a = \frac{-b \pm \sqrt{\Delta}}{2a} \rightarrow a = \frac{y-1 \pm \sqrt{(1-y)^2 - 4(y+1)}}{2}$$

$$\Rightarrow y^2 - 4y - 1 > 0 \rightarrow (y-1)(y+1) > 0$$

$$\rightarrow R_F = (-\infty, -1) \cup (1, +\infty)$$

-1	1
+	-
+	+

$$2x^2 - 4x + 1 \rightarrow \text{ext} \left| -\frac{1}{x} \rightarrow R_f = \left[-\frac{1}{x}, +\infty\right) \right. \quad (7)$$

$$\text{ب) } \sqrt{-x^2 + 4x - 4} \rightarrow -x^2 + 4x - 4 \text{ ext} \left| \begin{array}{l} x=2 \\ y=2 \end{array} \right. \\ \rightarrow R_f = (-\infty, 4] = R_f[0, 4]$$

$$\text{ج) } \text{Log}(x^2 - 4x + 1) \rightarrow (-\infty, +\infty) = R_f$$

$$\text{د) } \frac{x+1}{x-4} \Rightarrow R_f = R - \left\{ \frac{4}{x} \right\} \quad (5 \text{ سوال})$$

$$\text{ب) } \sqrt{\frac{x+1}{x-2}} = [0, +\infty) - \left\{ \frac{2}{x} \right\}$$

$$\text{ج) } \frac{x^2 + x + 1}{\sqrt{x^2 + x}} = \frac{x^2 + x}{\sqrt{x^2 + x}} + \frac{1}{\sqrt{x^2 + x}} = \sqrt{x^2 + x} + \frac{1}{\sqrt{x^2 + x}}$$

$$\rightarrow \min x \geq 0 \Rightarrow \min \sqrt{x} + \frac{1}{\sqrt{x}} = \frac{2}{\sqrt{x}}$$

$$\rightarrow R_f = \left[\frac{2}{\sqrt{x}}, +\infty \right)$$

$$\text{د) } x^2 + \frac{1}{x^2 + 4} + x - x \rightarrow x^2 + x + \frac{1}{x^2 + 4} - x \rightarrow \min x = 0$$

$$\rightarrow \min \frac{1}{x} \rightarrow R_f = \left[\frac{1}{x}, +\infty \right)$$

$$y = \sqrt{x^2 - 3x^2 + 4x + 1} \rightarrow R = \sqrt{R_1} \\ \rightarrow [0, +\infty)$$

چون منفرد است

7 سوال

(1.1) ✓

