

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

①

$$f(x) = \begin{cases} 2x-1; [x] > \Delta \rightarrow 2x-1; x > \Delta \\ \epsilon x + \gamma; [x] < \Delta \rightarrow \epsilon x + \gamma; x < \Delta \end{cases}$$

$$\rightarrow \begin{cases} x > \Delta \Rightarrow \sqrt{2x-1-x+1} \rightarrow \boxed{x > \Delta} \\ x < \Delta \Rightarrow \sqrt{\epsilon x + \gamma - x + 1} \rightarrow \gamma x + \epsilon > 0 \rightarrow \boxed{x > -\frac{\epsilon}{\gamma}} \end{cases}$$

$$\emptyset D_f = (-\frac{\epsilon}{\gamma}, \Delta) \cup [\Delta, +\infty) \Rightarrow D_f = (-\frac{\epsilon}{\gamma}, +\infty)$$

$$f = \frac{\gamma \epsilon x^2 + \gamma^2 \gamma x + \gamma \gamma x + \gamma}{(\epsilon x^2 + \epsilon x + 1)^2} \xrightarrow{\text{مخرج}} \frac{(\gamma x + 1) \gamma (\epsilon x^2 + \epsilon x + 1) - \gamma^2 (\gamma x + 1)^2}{(\gamma x + 1)^4} = \frac{\gamma}{\gamma x + 1} \quad \gamma x + 1 \neq 0 \sim \boxed{x \neq -\frac{1}{\gamma}}$$

②

$$\emptyset D_f = \mathbb{R} - \{-\frac{1}{\gamma}\}$$

$$f(x) = \begin{cases} \frac{x^2 + \gamma x - \gamma}{x^2 - 1}; x \neq \pm 1 \\ \frac{ax + \gamma}{x + b}; x = \pm 1 \end{cases}$$

③

$$g(x) = x + C \quad x = 0 \rightarrow C = \frac{-\gamma}{-1} \sim \boxed{C = \gamma}$$

$$b + C = ?$$

$$x = 1 \rightarrow 1 + \gamma = \frac{a + \gamma}{1 + b} \rightarrow \gamma + \gamma b = a + \gamma$$

$$x = -1 \rightarrow -1 + \gamma = \frac{-a + \gamma}{-1 + b} \rightarrow -1 + b = -a + \gamma$$

$$\emptyset \Rightarrow \frac{1}{\gamma} + \gamma = \gamma / \Delta \leq \frac{\Delta}{\gamma}$$

$$\Rightarrow \begin{cases} \gamma b - a = -1 \\ b + a = \gamma \end{cases}$$

$$\begin{cases} \epsilon b = \gamma \\ b = \frac{1}{\gamma} \end{cases}$$

$$f(u) = \frac{u+1}{u-c} \quad u=0 \rightarrow \frac{1}{-c} = \frac{-1}{b} \sim b=c \quad (4)$$

$$g(u) = \frac{u^2-1}{u^2+au+b} \rightarrow \frac{(u-1)(u+1)}{(u-c)(u-c)} \sim \boxed{c=+1} \quad \boxed{b=+1}$$

$$a+b+c=?$$

$$\hookrightarrow (u-1)(u-1) \rightarrow u^2 \overset{a}{-} 2u + \overset{b}{1}$$

$$(u-c)^2 = u^2 + au + b \rightarrow \boxed{c=1} \quad \boxed{b=1} \rightarrow \boxed{a=-2}$$

$$\phi \rightarrow 1+1-2 = 0$$

$$f(u) = (u-2)^2(u-1) \rightarrow \begin{matrix} u=u+1 & (u-2)^2(u-1) \rightarrow (u^2-4u+4)(u-1) \rightarrow u^3-5u^2+8u-4 \\ u=1-u & (-u-2)^2(-u) \rightarrow (u^2+4u+4)(-u) \rightarrow -u^3-4u^2-4u \end{matrix} \quad (5)$$

$$\phi \Rightarrow g(u) = -11u^2$$

$$f(1-u) = \begin{cases} \sqrt{u}+2 & ; u \leq 0 \\ \sqrt{u} & ; u > 0 \end{cases} \quad \begin{matrix} 1-2u=-1 \sim \boxed{u=1} \rightarrow f(1)=2 \\ 1-2u=3 \sim \boxed{u=-1} \rightarrow f(3)=1 \end{matrix} \quad (6)$$

$$f(-1)+f(3)=? \rightarrow 2+1=3 \quad (7)$$

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⑤

$$f(4) = ?$$

①

$$f(u-1) + f(1-u) = ? \rightarrow \left[(u-1)^u + u-1 \right] + \left[(1-u)^u + \underset{- (u-1)}{1-u} \right] = \underline{\underline{0}} \quad \checkmark$$

⑨

$$D_{\text{مکثر}} = 1$$

$$g(1) = \sqrt{b - \varepsilon} + \nu K$$

$$\Rightarrow \sqrt{E - \frac{1}{2}K} + \frac{1}{2}K - \sqrt{b - E} = K$$

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

$$\Rightarrow \sqrt{f-3a} - \sqrt{b-f} = \sqrt{k} + \sqrt{}$$

$$\sqrt{c - 10} = \sqrt{b - c}$$

$$x - \frac{1}{r} a = +b - \epsilon = 0 \rightarrow \begin{cases} b = \epsilon \\ a = \frac{\epsilon}{r} \end{cases}$$

$$\Rightarrow 0 = \frac{1}{K} + 1 \rightarrow \boxed{K = -1}$$

$$\Rightarrow 3\left(\frac{E}{V}\right) - \frac{(E)}{V} - (-1) - E - Y + 1 = 3$$

درازاہم سے A

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کتابتِ عمارت ۳

(10)

$$f(u) = \sqrt{m - u} + n \sim m - u > 0 \sim \boxed{m > u}$$

$$g(u) = \sqrt{2u + 2} \sim \boxed{u > -1}$$

$$-1 < u < m \\ \downarrow \\ \boxed{m = 7}$$

$$D_{f \times g} = [-1, 7]$$

$$f - g(3) = 4\sqrt{2} \rightarrow \sqrt{4} + n - (\sqrt{1}) = 4\sqrt{2} \Rightarrow 2 + n - 1 = 4\sqrt{2} \Rightarrow \boxed{n = 1\sqrt{2} - 1}$$

$$m + n = ?$$

$$\rightarrow 1\sqrt{2} - 1 + 7 = \boxed{1\sqrt{2} + 6}$$