

$y = x - 1 \xrightarrow{f^{-1}} x = y + 1 \Rightarrow y = x + 1 \Rightarrow y = \frac{x+1}{x}$
 $\Rightarrow y = \frac{x}{x} + \frac{1}{x} \Rightarrow$

$S_{ABC} = \frac{1}{2} \times \frac{1}{x} = \frac{1}{2}$

$y = x^2 - 2x + 3 \quad x \in [1, +\infty)$

الف) یک به یک است
 $y = x^2 - 2x + 3 \Rightarrow y = x^2 - 2x + 1 + 2 \Rightarrow y = (x-1)^2 + 2 \Rightarrow \sqrt{y-2} = x-1$
 $\Rightarrow x = 1 + \sqrt{y-2}$
 $D_{f^{-1}} = [2, +\infty)$

$f(x) = 2x - \sqrt{4 - f(x)(2-x)} = 2x - \sqrt{4 - (2-x)(2-x)} = 2x - \sqrt{4 - (2-x)^2}$
 $= 2x - (2 - (2-x)) = 2x - 1 \Rightarrow y = 2x - 1 \Rightarrow 2x = y + 1 \Rightarrow x = \frac{y+1}{2}$
 $\xrightarrow{f^{-1}} y = \frac{x-1}{2} = \frac{x}{2} - \frac{1}{2}$

$S = \frac{1 \times 1}{2} = \frac{1}{2}$

$f(x_1) = f(x_2) \Rightarrow \frac{x_1}{\sqrt{x_1^2 - 5}} = \frac{x_2}{\sqrt{x_2^2 - 5}} \Rightarrow \frac{x_1^2}{x_1^2 - 5} = \frac{x_2^2}{x_2^2 - 5}$
 $\Rightarrow x_1^2 x_2^2 - 5x_1^2 = x_1^2 x_2^2 - 5x_2^2 \Rightarrow x_1^2 = x_2^2 \Rightarrow x_1 = \pm x_2$
 $y = \frac{x}{\sqrt{x^2 - 5}} \Rightarrow x = \frac{y}{\sqrt{y^2 - 5}} \Rightarrow x^2 = \frac{y^2}{y^2 - 5} \Rightarrow y^2 x^2 - 5x^2 = y^2 \Rightarrow y^2 (x^2 - 1) = 5x^2 \Rightarrow y = \frac{\sqrt{5}x}{x^2 - 1}$

$g(x) = \begin{cases} x^2 - 4x + k & x \geq 2 \\ -x^2 + 4x + 3k & x < 2 \end{cases}$

$4 - 1 \geq 4 + 3k \Rightarrow 3 \geq 4 + 3k \Rightarrow k \leq -\frac{1}{3}$

$$f(n), |n| \Rightarrow f(n) = \begin{cases} En & n \geq 0 \\ n & n < 0 \end{cases} \quad f^{-1}(n) = \begin{cases} \frac{1}{E}n & n \geq 0 \\ \frac{1}{E}n & n < 0 \end{cases}$$

$$a+b \mid x \begin{cases} (a+b)x = \frac{1}{r}x \Rightarrow a+b = \frac{1}{r} \\ (a-b)x = \frac{1}{r}x \Rightarrow a-b = \frac{1}{r} \end{cases} \xrightarrow{+} \begin{matrix} a \\ b \end{matrix} = \frac{1}{r}$$

$$\Rightarrow a = \frac{r}{\lambda} \Rightarrow \frac{r}{\lambda} + b = \frac{1}{r} \Rightarrow b = -\frac{1}{\lambda} \Rightarrow a \times b = \frac{r}{\lambda} \times -\frac{1}{\lambda} = -\frac{r}{\lambda^2}$$

$$f(n) = \frac{r_n + f}{n + m} \Rightarrow (r_n - 1) \Rightarrow \frac{q + f}{r_n + m} = -1 \Rightarrow \frac{1}{r_n + m} = -1$$

$$\Rightarrow \frac{1}{r+m} = -1 \Rightarrow 1 = -r - m \Rightarrow m = -r \Rightarrow f(n) = \frac{r_n + r}{n - r} \Rightarrow \text{د. ا. ج. و. م.}$$

$$\Rightarrow f^{-1}(a) = f(a) \Rightarrow y = \underbrace{f \circ f^{-1}(a)}_a + f^{-1}(a) = a + f^{-1}(a) = a + \frac{a + f}{a - a} = a + \frac{a + f}{0}$$

$$f(\tilde{r}_n, r_n) + g\left(\frac{a_i}{r}\right) = r \implies f(\tilde{r}_n, r_n) = a \implies f^{-1}(a) = (\tilde{r}_n, r_n)$$

$$\frac{1}{a} \Rightarrow a + y\left(\frac{a}{r}\right) = r \Rightarrow y\left(\frac{a}{r}\right) = r - a \quad n = -\frac{f^{-1}(a) - r}{r}$$

$$\Rightarrow y^{-1}(r-a) = \frac{r}{r} \Rightarrow r = r y^{-1}(r-a) \quad \left. \begin{array}{l} r = -\frac{f^{-1}(a) - r}{r} \\ r = r y^{-1}(r-a) \end{array} \right\} \Rightarrow a = -r =$$

$$y = \frac{\omega n - 1^n}{1 - n} \xrightarrow{\text{مربعین}} -y = \frac{-\omega n - 1^n}{1 + n} \Rightarrow y = \frac{\omega n + 1^n}{1 + n} \xrightarrow{\text{دریافت}} \text{پایه}$$

$$\Rightarrow x^2 + 4x - 6 = 0 \Rightarrow x^2 - 4x - 6 = 0 \rightarrow \text{مجموع} = -\frac{b}{a} = 4$$

$$\frac{\omega(n-r) + 1^n}{1 + (n-r)} = \frac{\omega n - k + 1^n}{1 + n-r} = \frac{\omega n + 1^n}{n-1} \Rightarrow \frac{\omega n + 1^n - 1^n}{n-1} = \frac{1^n}{n-1}$$

$$f^{-1}(x) \Rightarrow \frac{x+5}{x-1} : y \Rightarrow y = \frac{x+5}{x-1} \Rightarrow \frac{x+5}{x-1} = \frac{x+5}{x-1} \Rightarrow$$

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