

کلیف ۳۰

دایره دفر A

نسبت

$$y = \sqrt{f(x) - a + 1} \geq 0$$

$$f(x) = \begin{cases} x-1 & [x] \geq r \\ x+r & [x] \leq r \end{cases} \rightarrow \begin{cases} x-1 & a \geq \omega \\ x+1 & a < \omega \end{cases}$$

$$\begin{array}{c|c} [-\frac{r}{p}, \omega) & a \in [\omega, r+\omega) \\ \hline x+r-a+1 & x-1-a+1 \\ x+r & a \geq 0 \\ x+r, -\frac{r}{p} & \end{array}$$

$$D_y = [-\frac{r}{p}, \infty)$$

$$g = \frac{x^p + rx^r + (a+r)}{(x+r-a+1)^r} = \frac{p(x^p + rx^r + 4a+1)}{(x+1)^p} = \frac{p(x+1)^p}{(x+1)^p}$$

$$= \frac{p}{x+1} \rightarrow x \neq -1 \rightarrow a \neq -\frac{1}{p} \rightarrow D_y = \mathbb{R} - \{-\frac{1}{p}\}$$

$$f(x) = \begin{cases} \frac{x^p + rx^r - a - r}{x^r - 1} & a \neq \pm 1 \\ \frac{ax + r}{a+b} & a = \pm 1 \end{cases} \quad g(a) = a + c$$

$$b + c = 9$$

$$a + c = a + r$$

$$c = r$$

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

$$\frac{ax + r}{a+b} = a + r \rightarrow \frac{a+r}{1+b} = p \rightarrow a+r = p+pb$$

$$a - pb = 1$$

$$\begin{cases} pb - a = -1 \\ b + a = p \end{cases} \rightarrow \begin{cases} a = -1 \\ b = p \end{cases}$$

$$pb = r \rightarrow b = \frac{r}{p}, a = \frac{r}{p}$$

$$b + c = \frac{r}{p} + r = \frac{r}{p}$$

$$f(a) = \frac{a+1}{a-c}$$

$$g(a) = \frac{a^2-1}{a^2+9a+b} = \frac{(a-1)(a+1)}{(a-1)(a+1)}$$

$$a+b+c=$$

(۲) ل. قول به هر دو ضلع برابر باشند و راند به برابر باشند $c=1$ ✓

$$a^2+9a+b=(a-1)^2=a^2-2a+1 \rightarrow a=-2 \quad b=1$$

$$a+b+c=1+1-2=0 \quad \checkmark$$

$$f(a) = (a-3)^2(a-1)$$

$$g(a) = f(a+1) + f(1-a) \quad (۲) \quad (۱)$$

$$f(a+1) = (a+1-3)^2(a+1-1) = (a-2)^2(a) = a^3+2a-2a^2$$

$$f(1-a) = (1-a-3)^2(1-a-1) = (-a-2)^2(-a) = -a^3-2a-2a^2$$

$$g(a) = a^3+2a-2a^2-a^3-2a-2a^2 = -4a^2 \quad \checkmark$$

$$f(1-2a) = \begin{cases} \sqrt[3]{1-2a} + 2 & a \leq 0 \\ 4\sqrt{1-2a} & a > 0 \end{cases}$$

$$f(-1) + f(2) = ? \quad (۴)$$

$$2+1=3 \quad \checkmark$$

(۲)

$$1-2a = -1 \rightarrow a = 1 \xrightarrow{a \leq 0} 4\sqrt{1} = 4 \quad \checkmark$$

$$1-2a = 2 \rightarrow a = -1 \xrightarrow{a \leq 0} \sqrt[3]{-1} + 2 = 1 \quad \checkmark$$

$$f(a+\sqrt{a}) = a^2 + 2a$$

$$f(4) = ?$$

(۲) (۱) ✓

$$if \ a=4 \rightarrow 4+\sqrt{4}=6 \rightarrow a^2+2a=4^2+2 \times 4=16+8=24 \quad \checkmark$$

$$a+\sqrt{a}=4 \rightarrow \sqrt{a}=4-a \xrightarrow{10 \leq 10} a=16+2a-12a$$

$$\rightarrow a^2-12a+16=0 \rightarrow (a-4)(a-4)=0$$

$$\begin{aligned} \sqrt{a} &= 4-a \\ 4+\sqrt{4} &= 4 \quad \checkmark \\ a &= 4 \end{aligned}$$

$$\begin{aligned} 4+\sqrt{4} &\neq 4 \\ 12 &\neq 4 \end{aligned}$$

تاریخ : (-m+1)

$$f(n-1) + f(1-n) = 0 \text{ من } f(n) = n^3 + n = n(n+1)(n-1) \quad (1)$$

$$f(n-1) = (n-1)(n)(n-2) \quad (2)$$

$$f(1-n) = (-n+1)(-n+2)(-n) = -(n-1)(n-2)(n)$$

$$f(n-1) + f(1-n) = [(n-1)(n)(n-2)] - [(n-1)(n-2)(n)] = 0 \quad (3)$$

$$f(x) = \sqrt{ax - x^2} + k - 1 \quad g(x) = \sqrt{b - x^2} + k \quad (4)$$

$$f - g = \{(b, k)\} \quad xa - \frac{b}{x} - k = ? \quad (5)$$

$$xa - xa > 0 \rightarrow -xa > 0 \rightarrow xa < 0 \rightarrow xa \leq 0 \rightarrow \frac{xa}{x} \leq 0$$

$$b - xa > 0 \rightarrow -xa > 0 \rightarrow xa < 0 \rightarrow xa \leq 0 \rightarrow m \leq \frac{b}{x}$$

$$1 = \frac{xa}{x} \rightarrow a = \frac{x}{x} \quad xa - \frac{b}{x} - k = x - 2 + 1 = (x-1) \quad (6)$$

$$\frac{b}{x} = 1 \rightarrow b = x$$

$$f(1) - g(1) = xk - 2 - xk = -k - 2 = k \rightarrow k = -1$$

$$f(x) = \sqrt{m-x} + n \quad g(x) = \sqrt{x+2} \quad (7) \quad (8)$$

$$D = [-1, 5] \quad f - g(x) = 4\sqrt{x} \quad m+n = ?$$

$$f \wedge g \rightarrow D_f \cap D_g = [-1, 5] \quad m+n = 1\sqrt{x} - 2 + 2 = 1 + 1\sqrt{x}$$

$$x+2 > 0 \rightarrow x > -2 \rightarrow [-1, +\infty)$$

$$m-x > 0 \rightarrow m < x \rightarrow m \leq 5 \rightarrow (-\infty, 5]$$

$$f(5) - g(5) = \sqrt{5-x} + n - \sqrt{x+2} = 2+n - 2\sqrt{x} = 4\sqrt{x}$$

$$\Rightarrow n = 1\sqrt{x} - 2$$