

تنگ ایوان - دوازدهم دختر A - تکلیف شماره ۳

①  $\boxed{[0, +\infty) \cap (0, +\infty) \leftarrow 2x-1 \geq x-1 \Rightarrow x \geq 0 \leftarrow \textcircled{1}}$

$$y = \sqrt{F(x) - x + 1} \rightarrow F(x) - x + 1 \geq 0 \rightarrow F(x) \geq x - 1 \rightarrow \begin{matrix} x \geq a \rightarrow IF(x-1) \\ x < a \rightarrow IF(x+1) \end{matrix}$$

$$F(x) = \begin{cases} 4x-1 & [x] > 1 \\ 4x+1 & [x] \leq 1 \end{cases}$$

$$\hookrightarrow \begin{cases} Kx + \mu \geq x - 1 \rightarrow x \geq -\frac{K}{\mu} \\ \hookrightarrow D = [-\frac{K}{\mu}, \alpha) \end{cases}$$

$$y_{iw} D_F = [-\frac{\pi}{16}, +\infty)$$

$$\frac{rx^{10} + 17x^9 + 14x + 1}{(x^9 + x + 1)^9} \rightarrow \frac{r(1x^{10} + 17x^9 + 14x + 1)}{(x^9 + x + 1)^9} = \frac{r(x+1)^9}{(x^9 + x + 1)^9} \quad (P)$$

$$\rightarrow \frac{w}{rx+1} \rightarrow rx \neq -1 \rightarrow x \neq -\frac{1}{r} \rightarrow D_f = \mathbb{R} - \left\{ -\frac{1}{r} \right\}$$

$$F(x) = \begin{cases} \frac{x^r + r x^{r-1} - x - r}{x^r - 1} \rightarrow x \neq \pm 1 & \begin{aligned} & \rightarrow x + C = x + r \rightarrow \boxed{C = r} \\ & \rightarrow x + C = \frac{x^r(x+r) - (x+r)}{x^r - 1} \end{aligned} \\ \frac{ax + r}{x+b} \rightarrow x = \pm 1 & \begin{aligned} & \hookrightarrow x=1 \rightarrow \frac{a+r}{a+b} = r \rightarrow r b = a-1 \rightarrow r b - a = -1 \end{aligned} \end{cases}$$

$$\underbrace{g(x) = x + c}_{D_g = R} \rightarrow b + c = ? \quad \hookrightarrow 0 + 1 = 1, \underline{ab}$$

$$\hookrightarrow x=1 \rightarrow \frac{a+r}{b+1} = 3 \rightarrow 3b = a-1 \rightarrow 3b-a = -1$$

$$\hookrightarrow x = -1 \rightarrow \frac{-a+r}{b-1} = 1 \rightarrow b = -a+r \rightarrow \underline{\underline{b+a=r}}$$

$$K_b = r$$

$$b = 0.10$$

$$a = r/\omega$$

$$F(x) = \frac{x+1}{x-c}$$

(k)

$$g(x) = \frac{x^r-1}{x^r+ax+b}$$

$$\rightarrow \frac{x^r-1}{x^r+ax+b} = \frac{x^r-1}{(x-c)(x-1)}$$

$$\rightarrow x^r+ax+b = (x-c)^r = x^r - rcx + c^r$$

$$\rightarrow x^r - (c+1)x + c \rightarrow a = -rc$$

$$\rightarrow b = c$$

$$a+b+c=r$$

$$\rightarrow -rc + c + c = 0$$

$$F(x) = (x-r)^r(x-1)$$

(d)

$$g(x) = F(x+1) + F(1-x) \rightarrow (x-r)^r(x) + (-x-r)^r(-x)$$

$$\rightarrow x[(x-r)^r - (x+r)^r] \rightarrow x(-1)x = \underline{-1x^2}$$

$$F(1-rx) = \begin{cases} \sqrt[r]{x} + r & x \leq 0 \\ r\sqrt{x} & x > 0 \end{cases}$$

(9)

$$\begin{matrix} 1-rx=-1 & 1-rx=r \\ F(-1) & + F(r) \\ x=1 & x=-1 \end{matrix} = r\sqrt{1} + \sqrt[r]{-1} + r \rightarrow r+1 = \textcircled{a}$$

$$F(x+\sqrt{x}) = x^r + rx$$

(v)

$$F(4) = ? \rightarrow x + \sqrt{x} = 4 \rightarrow \boxed{x=r} \rightarrow r^r + 1r = \underline{r^r + r}$$

(1)

$$F(x) = x^3 + x \rightarrow x(x^2 + 1)$$

$$F(x-1) + F(1-x) \rightarrow (x-1)[(x-1)^2 + 1] + \underbrace{(1-x)}_{-(x-1)}[(1-x)^2 + 1]$$

$$\rightarrow (x-1)[(x-1)^2 + 1 - (x-1)^2 - 1] = 0$$

$$F(x) = \sqrt{F x - 4a} + k - 1 \rightarrow F(1) = k - 1$$

$$g(x) = \sqrt{b - F x} + 3k \rightarrow g(1) = 3k$$

$$\rightarrow 2F(1) - g(1) = k \rightarrow 2k - 2 - 3k = k \rightarrow -2 = 2k \rightarrow \boxed{k = -1}$$

$$2F - g = \{(1, k)\} \rightarrow D_F \cap D_g = \{1\}$$

$$4a - \frac{b}{F} - k = ? \quad \left[\frac{4a}{F}, +\infty\right) \rightarrow (-\infty, \frac{b}{F}] \rightarrow \frac{4a}{F} = \frac{b}{F} = 1 \rightarrow \begin{cases} a = \frac{F}{4} \\ b = F \end{cases}$$

$$\rightarrow F - 2 + 1 = \underline{\underline{3}}$$

(10)

$$F(x) = \sqrt{m - x} + k \rightarrow D_F = (-\infty, m]$$

$$g(x) = \sqrt{2x + 2} \rightarrow D_g = [-1, +\infty)$$

$$D_{F \cap g} = [-1, v]$$

$$\Rightarrow D_F \cap D_g = [-1, v] \rightarrow \underline{\underline{m = v}}$$

$$F - g(x) = 4\sqrt{F} \rightarrow F(x) - g(x) = 4\sqrt{F} \rightarrow 2 + m - 2\sqrt{F} = 4\sqrt{F} \rightarrow m = 1\sqrt{F} + 2$$

$$m + n = ? \rightarrow \underline{\underline{1\sqrt{F} + 2}}$$