

$$f(x) = x + 1 \geq 0 \rightarrow \begin{cases} x - 1 - x + 1 = 0 \\ x + 3 - x + 1 = 3x + 4 \geq 0 \rightarrow 3x \geq -4 \rightarrow x \geq -\frac{4}{3} \end{cases} \rightarrow [-\frac{4}{3}, +\infty) = D_f$$

$$x^p + x + 1 \rightarrow (x+1)^p \neq 0 \rightarrow x \neq -\frac{1}{p} \rightarrow \mathbb{R} - \{-\frac{1}{p}\}$$

$$3(x^3 + 1)(x^p + x + 1) \rightarrow 3(x+1)^3 \rightarrow x = -\frac{1}{p}$$

$$\frac{3(x+1)^3}{(x+1)^p} = \frac{3}{x+1}$$

$$\frac{x^p + x^p - x - p}{x^p - x^p} \cdot \frac{x-1}{x^p + 3x + p} = \frac{(x-1)(x+p)(x-1)}{(x+1)(x+1)} = x + p$$

$$\frac{3x^p - x - p}{3x^p + 3x} \rightarrow \frac{px - p}{px - p}$$

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

$$\downarrow$$

$$x = 1 \rightarrow 3$$

$$x = -1 \rightarrow 1$$

$$\textcircled{1} \frac{a+p}{1+b} = 3 \rightarrow 3+3b = a+p \rightarrow 1+3b = 3-b$$

$$4b = p \rightarrow b = \frac{p}{4}$$

$$\boxed{C=p} \rightarrow b+C = \frac{1}{p} + p$$

$$\textcircled{2} \frac{a+p}{-1+b} = 1 \rightarrow -1+b = -a+p \rightarrow a = 3-b \rightarrow a = \frac{3}{4}$$

$$\frac{(x-1)(x+1)}{(x-1)(x-C)} \rightarrow \begin{matrix} b=C \\ a=-C-1 \end{matrix}$$

$$\frac{x-1}{x-1}$$

$$x^p + (-C-1)x + C \rightarrow -C-1 + C + C = C-1 = 1-1 = 0$$

$$f(x+1) = (x-p)^p(x) = (x^p - px + p)x = x^p - px^2 + px$$

$$f(1-x) = (-p-x)^p(-x) = (x^p + px + p)(-x) = -x^p - px^2 - px$$

$$\left. \begin{matrix} x^p - px^2 + px \\ -x^p - px^2 - px \end{matrix} \right\} -1x^p = g(x)$$

$$\left. \begin{matrix} 1 - px = -1 \rightarrow p - px \rightarrow x = 1 \rightarrow p \\ 1 - px = 3 \rightarrow px = -2 \rightarrow x = -1 \rightarrow -1 \end{matrix} \right\} \parallel$$

s.a.m

$$\frac{x}{t^p} = \frac{\sqrt{x}}{t} = c \rightarrow t^p + t - c = 0 \rightarrow (t+p)(t-p) = 0 \rightarrow t = p, -p \quad \text{في } \sqrt{x} = p, x = p^2 \rightarrow p^p + 1p = p^p + 1 \quad \text{--- } \checkmark$$

$$\begin{aligned} (x-1)^p + x - 1 &\rightarrow x^p - 1 - px^{p-1} + px + x - 1 = x^p - px^{p-1} + px - 1 \\ (1-x)^p + 1 - x &\rightarrow -x^p + 1 - px + px^p + 1 - x \rightarrow -x^p + px^p - px + 1 - x \end{aligned} \quad \text{--- } \wedge$$

صفر

$$\begin{aligned} b - \frac{1}{p}a &\geq 0 \rightarrow b \geq \frac{1}{p}a \rightarrow \frac{b}{\frac{1}{p}} \geq \frac{1}{p}a \rightarrow b = \frac{1}{p}a \\ \frac{1}{p}a - \frac{1}{p}a &\geq 0 \rightarrow \frac{1}{p}a \geq \frac{1}{p}a \rightarrow \frac{1}{p}a \geq \frac{1}{p}a \rightarrow a = \frac{1}{p}a \quad \text{--- } 9 \end{aligned}$$

$p - p + 1 = 1$

$$\begin{aligned} \sqrt{p-x} + pk &= g(x) \rightarrow pk \\ \sqrt{p-x} + k - 1 &= f(x) \rightarrow pk - p \end{aligned} \quad \left. \begin{array}{l} \\ \end{array} \right\} \rightarrow pk - p - pk = k \rightarrow -p = pk \quad \text{--- } \checkmark$$

$k = -1$

$$\begin{aligned} p_x + p &\geq 0 \rightarrow p_x \geq -p \rightarrow x \geq -1 \\ \sqrt{m-x} + n &\leq v \\ m + n &= v + \sqrt{m-x} - p = \phi + \sqrt{p} \end{aligned} \quad \begin{aligned} \sqrt{m-p} + n &= \sqrt{p} \\ \sqrt{\frac{m}{p} - 1} + n &= \sqrt{p} \rightarrow n = \sqrt{p} - 1 \end{aligned} \quad \text{--- } 1.$$