

$$\sqrt{x^3 f(x+1)} \rightarrow x^3 (1+x)^{x-1} \geq 0$$

$$\begin{array}{c} | \\ - \oplus + \oplus - \\ | \end{array} \quad D = [0, 1]$$

$$f(x) = \sqrt{x + |x+2|}$$

$$f(-x) = \sqrt{-x + |-x+2|}$$

$$D = (-\infty, 1]$$

$$-x + |x+2| \geq 0$$

$$|x+2| \geq x \rightarrow \begin{array}{l} x \leq 2 \rightarrow x+2 \geq x \rightarrow -2x \geq -2 \rightarrow x \leq 1 \\ x \geq 2 \rightarrow x-2 \geq x \quad \text{Q} \end{array}$$

$$\frac{x-1}{f(x)} \geq 0$$

$$x=1$$

$$\begin{array}{c} | \\ - \oplus + \oplus - \oplus + \oplus \\ | \end{array}$$

$$D = (-1, 1] \cup (2, 3)$$

$$\frac{1}{(x^3+x+1)(x^3-x-3)} \rightarrow x^3-x-3 = x^3+a+b \rightarrow \begin{array}{l} a=-1 \\ b=-3 \end{array}$$

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$$\sqrt{-(a+b)} = \sqrt{-(-4)} =$$

$$f(x) - f\left(\frac{x}{x}\right) = (x^3+x) - \left(\left(\frac{x}{x}\right)^3 + \frac{x}{x}\right) = x^3+x - \frac{4x}{x^3} - \frac{x}{x} =$$

$$\frac{x^4+x^4-4x^2-4x}{x^3}$$

$$x=1 \rightarrow f(x)=1$$

$$x=2 \rightarrow f(x)=4$$

$$f(x) + f(1) = 10$$

$$g(x) = (x+2)^2 - 2x$$

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

$$\frac{(\sqrt[3]{x-2+2})^2 - 2x}{(\sqrt[3]{x-2+2})^2 + 1} = \frac{-20}{10} = -2$$

$$f(x) = (x-4)(0, \frac{1}{10})$$

$$g(x) = (x+1)(0, 4)$$

$$\frac{g}{f} = (x, -\frac{1}{4})(0, 6)$$

$$الف) (\frac{1}{2}, 2) (\frac{3}{4}, -1) (1, 2) (-\frac{1}{4}, 2)$$

$$ب) (1, 2) (\sqrt{3}, -1) (2, 2)$$

ج)

$$د) (1, -4) (2, -1)$$