

Primitive uzuale 3

$$1. \int \frac{\sqrt{x^2+3} + 2\sqrt{x^2-3}}{\sqrt{x^4-9}} dx, x \in (\sqrt{3}, \infty).$$

$$\int \frac{\sqrt{x^2+3} + 2\sqrt{x^2-3}}{\sqrt{x^4-9}} dx, x \in (\sqrt{3}, \infty) = \int \frac{\sqrt{x^2+3}}{\sqrt{x^4-9}} dx + 2 \int \frac{\sqrt{x^2-3}}{\sqrt{x^4-9}} dx =$$

$$= \int \frac{1}{\sqrt{x^2-3}} dx + 2 \int \frac{1}{\sqrt{x^2+3}} dx = \ln(x + \sqrt{x^2-3}) + \ln(x + \sqrt{x^2+3}) + \mathcal{C}.$$

$$2. \int \frac{1}{x^4-1} dx, x \in (1, \infty).$$

$$\int \frac{1}{x^4-1} dx = \frac{1}{2} \int \frac{x^2+1-x^2+1}{(x^2+1)(x^2-1)} = \frac{1}{2} \int \left(\frac{1}{x^2-1} - \frac{1}{x^2+1} \right) dx =$$

$$= \frac{1}{2} \left(\frac{1}{2} \ln \frac{x-1}{x+1} - \operatorname{arctg} x \right) + \mathcal{C}.$$

$$3. \int \frac{1-x}{\sqrt{4-x^2}} dx, x \in (-2, 2).$$

$$\int \frac{1-x}{\sqrt{4-x^2}} dx = \int \frac{1}{\sqrt{4-x^2}} dx + \int \frac{-x}{\sqrt{4-x^2}} dx = \arcsin \frac{x}{2} + \sqrt{4-x^2} + \mathcal{C}.$$