

$$\begin{array}{llll}
1. \int_0^1 \frac{\ln(Hx)}{Hx^2} dx & 2. \int \frac{dx}{x^4 \sqrt{x^2+1}} & 3. \int \frac{\sqrt{x}}{\sqrt{x}-\sqrt[3]{x}} dx & 4. \int \frac{dx}{\sqrt[3]{(x+1)^2(x-1)^4}} \\
5. \int_0^{+\infty} \frac{dx}{(Hx^2)(Hx^4)} \quad (\alpha \text{ 为常数}) & 6. I = \int_0^1 \frac{dx}{2x-\sqrt{Hx^2}} & 7. I = \int_0^2 \frac{x}{Hx^2} dx & \\
8. \int \frac{\arcsin e^x}{e^x} dx & 9. \int \frac{2x}{(x+1)(x^2+1)^2} dx & 10. \int |x-1| dx, x \in \mathbb{R} & \\
11. \int \frac{1}{1-x^2} \ln \frac{Hx}{1-x} dx & 12. \int \frac{\sin x \cos x}{\sqrt{a^2 \sin^2 x + b^2 \cos^2 x}} dx & 13. \int \frac{x^4}{(x+1)^{100}} dx & \\
14. \int \left[\frac{f(x)}{f'(x)} - \frac{f''(x)f'(x)}{[f'(x)]^3} \right] dx & 15. \int \frac{x}{\sqrt{(Hx^2)^3}} e^{-\frac{1}{\sqrt{Hx^2}}} dx & & \\
16. \int \frac{dx}{(x-a)\sqrt{(x-a)(x-b)}} & 17. \int \frac{H \sin x}{1+\cos x} dx & 18. \int \frac{7 \cos x - 3 \sin x}{5 \cos x + 2 \sin x} dx & \\
19. \int \frac{\sqrt{x(Hx)}}{\sqrt{x} + \sqrt{Hx}} dx & 20. \int \frac{\sqrt{2x^2+3}}{x} dx & 21. \int \frac{dx}{\sqrt{(x-2)(x-3)}} & \\
22. \int \frac{e^{\arctan x}}{(Hx^2)\sqrt{Hx^2}} dx & 23. \int \frac{\cos x \sin x}{H \sin x \cos x} dx & 24. \int \frac{\sin x \cos x}{H \sin x \cos x} dx & \\
25. \int \frac{\sin x}{\sqrt{2+\sin 2x}} dx & 26. \int \frac{\tan x}{a^2 \sin^2 x + b^2 \cos^2 x} dx & 27. \int \frac{Hx}{x(Hxe^x)} dx & \\
28. \int \sqrt{\frac{e^x-1}{e^x+1}} dx & 29. \int \frac{\ln \tan x}{\sin 2x} dx & 30. \int \frac{dx}{x^4 \sqrt{Hx^2}} & \\
31. \int \frac{\sqrt{a^2-x^2}}{x^4} dx & 32. \int x e^x \sin x dx & 33. \int \frac{x^3}{(x+1)^2(x^2+x+1)} dx & \\
34. \int_0^\pi \sqrt{\sin x - \sin^3 x} dx & 35. \int_0^{k\pi} \sqrt{H \sin^2 x} dx & 36. \int_0^\pi \frac{\sin x}{\sin x} dx & \\
37. \int_{\frac{\pi}{6}}^{\frac{\pi}{3}} \frac{x^2}{(x \sin x + \cos x)^2} dx & 38. \int_0^{\frac{\pi}{4}} \ln(H \tan x) dx & 39. \int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \frac{\sin^4 x}{1+e^x} dx &
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