

$$\boxed{1} \quad \int x^{\frac{1}{\log x}} dx = \boxed{ex}$$

$$\boxed{2} \quad \int \operatorname{sech}(x) dx = \boxed{2 \arctan(e^x)}$$

$$\boxed{3} \quad \int \frac{e^x}{(1+e^x)\log(1+e^x)} dx = \boxed{\log(\log(1+e^x))}$$

$$\boxed{4} \quad \int (1+x+x^2+x^3+x^4)(1-x+x^2-x^3+x^4) dx = \boxed{x + \frac{x^3}{3} + \frac{x^5}{5} + \frac{x^7}{7} + \frac{x^9}{9}}$$

$$\boxed{5} \quad \int_0^4 \binom{x}{5} dx = \boxed{0}$$

$$\boxed{6} \quad \int (x + \sin(x) + x \cos(x) + \sin(x) \cos(x)) dx = \boxed{\frac{(x + \sin(x))^2}{2}}$$

$$\boxed{7} \quad \int (\sin^2(x) + \cos^2(x) + \tan^2(x) + \cot^2(x) + \sec^2(x) + \csc^2(x)) dx = \boxed{2 \tan(x) - 2 \cot(x) - x}$$

$$\boxed{8} \quad \int_0^{2\pi} [2023 \sin(x)] dx = \boxed{-\pi}$$

$$\boxed{9} \quad \int (2 \log x + 1) e^{(\log x)^2} dx = \boxed{x e^{(\log x)^2}}$$

$$\boxed{10} \quad \int ((1-x)^3 + (x-x^2)^3 + (x^2-1)^3 - 3(1-x)(x-x^2)(x^2-1)) dx = \boxed{0}$$

$$\boxed{11} \int_{-2023}^{2023} \underbrace{||| |x| - 1| - 1| \cdots | - 1|}_{2023 \text{ } (-1)\text{'s}} dx = \boxed{2023}$$

$$\boxed{12} \int (\sin^6 x + \cos^6 x + 3 \sin^2 x \cos^2 x) dx = \boxed{x}$$

$$\boxed{13} \int (x + e + 1)x^e e^x dx = \boxed{x^{e+1} e^x}$$

$$\boxed{14} \int_0^1 \left( \frac{x^2}{2-x^2} + \sqrt{\frac{2x}{x+1}} \right) dx = \boxed{1}$$

$$\boxed{15} \int \frac{1 + 2x^{2022}}{x + x^{2023}} dx = \boxed{\frac{1}{2022} \log(x^{2022} + x^{4044})}$$

$$\boxed{16} \int (3 \sin(20x) \cos(23x) + 20 \sin(43x)) dx = \boxed{\sin(20x) \sin(23x)}$$

$$\boxed{17} \int_0^1 \prod_{k=0}^{\infty} \left( \frac{1}{1 + x^{2^k}} \right) dx = \boxed{\frac{1}{2}}$$

$$\boxed{18} \int \frac{\sin x}{2e^x + \cos x + \sin x} dx = \boxed{\frac{x - \log(2e^x + \cos x + \sin x)}{2}}$$

$$\boxed{19} \int \frac{\log(x/\pi)}{(\log x)^{\log(\pi e)}} dx = \boxed{\frac{x}{(\log x)^{\log \pi}}}$$

$$\boxed{20} \int_{-3/2}^{-1/2} (x^5 + 5x^4 + 10x^3 + 8x^2 + x) dx = \boxed{\frac{5}{6}}$$