

$$1. \int (3x - 11)^9 dx$$

$$\frac{1}{30}(3x - 11)^{10} + C$$

$$2. \int x(a + bx)^n dx$$

$$\frac{1}{b^2} \left(\frac{(a+bx)^{n+2}}{n+2} - a \cdot \frac{(a+bx)^{n+1}}{n+1} \right) + C$$

$$3. \int \frac{x}{(a+bx)^n} dx$$

$$\frac{1}{b^2} \left(\frac{(a+bx)^{2-n}}{2-n} - a \frac{(a+bx)^{1-n}}{1-n} \right) + C$$

$$4. \int \frac{x^2}{(a+bx)^n} dx$$

$$\frac{1}{b^3} \left(\frac{(a+bx)^{3-n}}{3-n} - 2a \frac{(a+bx)^{2-n}}{2-n} + a^2 \frac{(a+bx)^{1-n}}{1-n} \right) + C$$

$$5. \int \frac{dx}{9x^2+4}$$

$$\frac{1}{6} \operatorname{arctg} \frac{3}{2}x + C$$

$$6. \int \frac{dx}{x^2+5x+11}$$

$$\frac{2}{\sqrt{19}} \operatorname{arctg} \frac{x+5}{\sqrt{19}} + C$$

$$7. \int \frac{dx}{\sqrt{x^2+4x+5}}$$

$$\ln(x + 2 + \sqrt{x^2 + 4x + 5}) + C$$

$$8. \int \frac{dx}{\sqrt{1-3x^2}}$$

$$\frac{1}{\sqrt{3}} \arcsin \sqrt{3}x + C$$

$$9. \int \frac{dx}{(x-\sqrt{x^2-1})^2}$$

$$\frac{2}{3}x^3 - x + \frac{2}{3}(x^2 - 1)^{\frac{3}{2}} + C$$

$$10. \int \frac{e^x}{4+e^x} dx$$

$$\ln(4 + e^x) + C$$

$$11. \int \frac{dx}{1+3^x}$$

$$\frac{1}{\ln 3} \ln \frac{3^x}{1+3^x} + C = -\frac{1}{\ln 3} \ln(1 + 3^{-x}) + C$$

$$12. \int \frac{dx}{\sqrt{2^x+1}}$$

$$\frac{1}{\ln 2} \ln \left| \frac{\sqrt{2^x+1}-1}{\sqrt{2^x+1}+1} \right| + C$$

$$13. \int \frac{\ln^4 x}{x} dx$$

$$\frac{1}{5} \ln^5 x + C$$

$$14. \int \frac{\cos x}{\sin^2 x} dx$$

$$-\frac{1}{\sin x} + C$$

$$15. \int \frac{\sin x}{\sqrt{\cos^3 x}} dx$$

$$\frac{2}{3} \frac{1}{\sqrt{\cos^3 x}} + C$$

$$16. \int \frac{\sqrt[3]{\operatorname{tg}^2 x}}{\cos^2 x} dx$$

$$\frac{3}{5} \operatorname{tg}^{\frac{5}{3}} x + C$$

$$17. \int \frac{\sin 2x}{\sin^2 x + 3} dx$$

$$\frac{\sqrt{3}}{3} \operatorname{arctg} \frac{\sin^2 x}{\sqrt{3}} + C$$

$$18. \int \cos^2 x dx$$

$$\frac{1}{2}x + \frac{1}{4} \sin 2x + C$$

$$19. \int \sin^2 x dx$$

$$\frac{1}{2}x - \frac{1}{4} \sin 2x + C$$

$$20. \int \frac{dx}{\cos x}$$

$$\frac{1}{2} \ln \left| \frac{\sin x + 1}{\sin x - 1} \right| + C$$

$$21. \int \frac{dx}{\sin x}$$

$$\frac{1}{2} \ln \left| \frac{\cos x - 1}{\cos x + 1} \right| + C$$

$$22. \int \cos 3x \sin 4x dx$$

$$-\frac{\cos 7x}{14} - \frac{\cos x}{2} + C$$

$$23. \int \sqrt{\frac{\arccos x}{1-x^2}} dx$$

$$-\frac{2}{3} \sqrt{\arccos^3 x} + C$$

$$24. \int \frac{x^2}{\sin x^3} dx$$

$$\frac{1}{6} \ln \left| \frac{\cos x^3 - 1}{\cos x^3 + 1} \right| + C$$

$$25. \int \frac{x - \operatorname{arctg} x}{1+x^2} dx$$

$$\frac{1}{2} \ln(1+x^2) - \frac{1}{2} \operatorname{arctg}^2 x + C$$

$$26. \int \frac{dx}{\cosh x}$$

$$2 \operatorname{arctg} e^x + C$$

$$27. \int \frac{dx}{\cosh x}$$

$$\operatorname{arctg} \sinh x + C$$

$$28. \int \frac{1}{\cosh^2 x} dx$$

$$\operatorname{tgh} x + C$$

$$29. \int \frac{dx}{\operatorname{tg} x \ln^2 \sin x}$$

$$-\frac{1}{\ln \sin x} + C$$

$$30. \int x e^{2x} dx$$

$$\frac{e^{2x}}{4} (2x - 1) + C$$

$$31. \int x \ln x dx$$

$$\frac{x^2}{4} (2 \ln x - 1) + C$$

$$32. \int x a^x dx$$

$$\frac{1}{\ln a} x a^x - \frac{1}{\ln^2 a} a^x + C$$

$$33. \int \ln x dx$$

$$x(\ln x - 1) + C$$

$$34. \int \arcsin x dx$$

$$x \arcsin x + \sqrt{1-x^2} + C$$

$$35. I_n = \int \frac{dx}{(x^2+1)^n}$$

$$I_1 = \operatorname{arctg} x + C$$

$$I_{n+1} = \frac{2n-1}{2n} I_n + \frac{1}{2n} \frac{x}{(x^2+1)^n} + C, n \in \mathbb{N}$$

$$36. \int e^{\arcsin x} dx$$

$$\frac{1}{2} x e^{\arcsin x} + \frac{1}{2} \sqrt{1-x^2} \arcsin x + C$$

$$37. \int \sinh^2 x dx$$

$$\frac{1}{2} (\sinh x \cosh x - x) + C$$

$$38. \int \frac{x e^x}{(1+x)^2} dx$$

$$\frac{e^x}{x+1} + C$$

$$39. \int \frac{x \arcsin x}{\sqrt{1-x^2}} dx$$

$$x - \sqrt{1-x^2} \arcsin x + C$$

$$40. \int e^{2x} \cos x dx$$

$$\frac{e^{2x}}{5} (\sin x + 2 \cos x) + C$$

$$41. \int \sin x \ln(\operatorname{tg} x) dx$$

$$-\cos x \ln(\operatorname{tg} x) + \frac{1}{2} \ln \left| \frac{1-\cos x}{1+\cos x} \right| + C$$

$$42. \int x \operatorname{tg}^2 x dx$$

$$x \operatorname{tg} x - \frac{1}{2} x^2 + \ln |\cos x| + C$$

$$43. \int \frac{\operatorname{arctg} e^x}{e^x} dx$$

$$-\frac{\operatorname{arctg} x}{e^x} + \ln \left| \frac{e^{2x}}{e^{2x}+1} \right| + C$$

$$44. \int \ln(x + \sqrt{1+x^2}) dx$$

$$x \ln(x + \sqrt{1+x^2}) - \sqrt{1+x^2} + C$$

$$45. \int \frac{e^{\operatorname{arctg} x}}{\sqrt{(1+x^2)^3}} dx$$

$$\frac{1}{2} e^{\operatorname{arctg} x} \frac{x+1}{\sqrt{1+x^2}} + C$$

$$46. \int \arcsin \sqrt{\frac{x}{x+1}} dx$$

$$x \arcsin \sqrt{\frac{x}{x+1}} + \operatorname{arctg} \sqrt{x} - \sqrt{x} + C$$