

$$\sin A \cos B = \frac{1}{2} [\sin(A-B) + \sin(A+B)]$$

$$\sin A \sin B = \frac{1}{2} [\cos(A-B) - \cos(A+B)]$$

$$\cos A \cos B = \frac{1}{2} [\cos(A-B) + \cos(A+B)]$$

**Table of Integration Formulas** Constants of integration have been omitted.

$$1. \int x^n dx = \frac{x^{n+1}}{n+1} \quad (n \neq -1)$$

$$2. \int \frac{1}{x} dx = \ln|x|$$

$$3. \int e^x dx = e^x$$

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

$$5. \int \sin x dx = -\cos x$$

$$6. \int \cos x dx = \sin x$$

$$7. \int \sec^2 x dx = \tan x$$

$$8. \int \csc^2 x dx = -\cot x$$

$$9. \int \sec x \tan x dx = \sec x$$

$$10. \int \csc x \cot x dx = -\csc x$$

$$11. \int \sec x dx = \ln|\sec x + \tan x|$$

$$12. \int \csc x dx = \ln|\csc x - \cot x|$$

$$13. \int \tan x dx = \ln|\sec x|$$

$$14. \int \cot x dx = \ln|\sin x|$$

$$15. \int \sinh x dx = \cosh x$$

$$16. \int \cosh x dx = \sinh x$$

$$17. \int \frac{dx}{x^2 + a^2} = \frac{1}{a} \tan^{-1}\left(\frac{x}{a}\right)$$

$$18. \int \frac{dx}{\sqrt{a^2 - x^2}} = \sin^{-1}\left(\frac{x}{a}\right)$$

$$*19. \int \frac{dx}{x^2 - a^2} = \frac{1}{2a} \ln \left| \frac{x-a}{x+a} \right|$$

$$*20. \int \frac{dx}{\sqrt{x^2 \pm a^2}} = \ln|x + \sqrt{x^2 \pm a^2}|$$