FORMULAS

$$\cos^2 A = \frac{1 + \cos 2A}{2}$$

$$\sin^2 A = \frac{1 - \cos 2A}{2}$$

$$\sin 2A = 2 \sin A \cos A$$

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

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

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

$$\int \csc x dx = \ln |\csc x - \cot x| + c$$

$$\int \tan x dx = \ln |\sec x| + c$$

$$\int \sec x dx = \ln |\sec x + \tan x| + c$$

$$\int \cot x dx = \ln |\sin x| + c$$

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

$$\int \frac{dx}{\sqrt{1 - x^2}} = \sin^{-1} x + c$$