Some trigonometric identities.

$$\cos^2 x = \frac{1}{2}(1 + \cos 2x)$$

$$\sin^2 x = \frac{1}{2}(1 - \cos 2x)$$

$$\sin 2x = 2 \sin x \cos x$$

Some integrals.

$$\int \frac{du}{a^2 + u^2} = \frac{1}{a} \arctan\left(\frac{u}{a}\right) + c$$

$$\int \frac{du}{\sqrt{a^2 - u^2}} = \arcsin\left(\frac{u}{a}\right) + c$$

$$\int \sec u \; du = \ln|\sec u + \tan u| + c$$

$$\int \sec^3 u \; du = \frac{1}{2}\sec u \tan u + \frac{1}{2}\ln|\sec u + \tan u| + c$$

$$\int \csc u \; du = \ln|\csc u - \cot u| + c$$