

Examples:

$$1) \int (t^2 - \sin t) dt = \frac{t^3}{3} - (-\cos t) + C$$
$$\frac{t^3}{3} + \cos t + C$$

$$2) \int (\theta^2 - \sec^2 \theta) d\theta = \frac{\theta^3}{3} - \tan \theta + C$$

$$3) \int \sec y (\tan y - \sec y) dy$$
$$= \int (\sec y \tan y - \sec^2 y) dy$$
$$= \sec y - \tan y + C$$

$$4) \int \frac{\sin x}{1 - \sin^2 x} dx = \int \frac{\sin x}{\cos^2 x} dx = \int \tan x \cdot \frac{1}{\cos x} dx$$
$$= \int \tan x \cdot \sec x dx = \sec x + C$$