

$$\int \frac{\cos x}{\sin x + 1} dx$$

---

Wir substituieren:  $u = \sin x + 1$

$$\frac{du}{dx} = \cos x$$

$$du = \cos x dx$$

$$\int \frac{\cos x}{\sin x + 1} dx = \int \frac{\cos x dx}{\sin x + 1} = \int \frac{du}{u} = \int \frac{1}{u} du = \ln |u| = \ln |\sin x + 1|$$

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

---

Wir substituieren:  $u = x^2$

$$\frac{du}{dx} = 2x$$

$$du = 2x dx$$

$$\frac{du}{2x} = dx$$

$$\int x \cos x^2 dx = \int x \cos u \frac{du}{2x} = \int \frac{x \cos u}{2x} du = \frac{1}{2} \int \cos u du = \frac{1}{2} \sin u = \frac{1}{2} \sin(x^2)$$