Common Calculus Mistakes

Indefinite Integral

The Goal

Find

$$\int \cos(x)\, dx$$

The Mistake

Find the mistake:

$$\int \cos(x)\, dx = -\sin(x) + C$$

Need a hint? Look carefully at the red part:

$$\int \cos(x)\, dx = -\sin(x) + C$$

The Correction

$$\int \cos(x)\, dx = \sin(x) + C$$

An Explanation

The integral of the cosine function is not negative sine, but rather is positive sine, since the *derivative* of sine is cosine.