Middlebury College

Calculus II: Fall 2017

Contact: gmelvin@middlebury.edu

Important integrals

A.

$$\int (f(x) \pm g(x))dx = \int f(x)dx \pm \int g(x)dx$$

B.

$$\int cf(x)dx = c\int f(x)dx, \quad (c \text{ constant})$$

C.

$$\int x^n dx = \frac{x^{n+1}}{n+1} + C \quad (n \neq 1)$$

D.

$$\int \frac{1}{x}\, dx = \log|x| + C$$

E.

$$\int \exp(x)dx = \exp(x) + C$$

F.

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

G.

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

H.

$$\int \sec^2(x)dx = \tan(x) + C$$

I.

$$\int \csc^2(x)dx = -\cot(x) + C$$

J.

$$\int \frac{1}{\sqrt{a^2 - x^2}}dx = \frac{1}{a}\arcsin\left(\frac{x}{a}\right) + C$$

K.

$$\int \frac{1}{a^2 + x^2}dx = \frac{1}{a}\arctan\left(\frac{x}{a}\right) + C$$

L.

$$\int \sec(x)dx = \log|\sec(x) + \tan(x)| + C$$

M.

$$\int \csc(x)dx = \log|\csc(x) - \cot(x)| + C$$

N.

$$\int \sec(x)\tan(x)dx = \sec(x) + C$$

O.

$$\int \sec^3(x)dx =$$

$$\frac{1}{2}\sec(x)\tan(x) + \frac{1}{2}\log|\sec(x) + \tan(x)| + C$$