Common integrals review

Review the integration rules for all the common function types.

Polynomials

$$\int x^n \, dx = \frac{x^{n+1}}{n+1} + C$$

Radicals

$$\int \sqrt[m]{x^n} \, dx = \int x^{\frac{n}{m}} \, dx$$

$$= \frac{x^{\frac{n}{m}+1}}{\frac{n}{m}+1} + C$$

Want to learn more about integrating polynomials and radicals? Check out this video.

Want to practice integrating polynomials and radicals? Check out these exercises:

Indefinite integrals intro
Indefinite integrals
Indefinite integrals: advanced

Trigonometric functions

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

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

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

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

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

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

Want to learn more about integrating trigonometric functions? Check out this video.

Want to practice integrating trigonometric functions? Check out these exercises:

Indefinite integrals: sin & cos
Integrating trig functions

Exponential functions

$$\int e^x\,dx = e^x + C$$

$$\int a^x \, dx = \frac{a^x}{\ln(a)} + C$$

Integrals that are logarithmic functions

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

Want to learn more about integrating exponential functions and $\frac{1}{x}$? Check out this video.

Want to practice integrating exponential functions and $\frac{1}{x}$? Check out this exercise.

Integrals that are inverse trigonometric functions

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

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

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Question

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