

# Integral

17 Septembre, 2023

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## The Integral (AntiDerivative)

### Definition

Theorem:

If  $F$  a antiderivative of  $f$  then  $F+C$  is the most general antiderivative

Ex:

$$f(x) = \cos(x)$$

$$F(x) = \sin x + c$$

Ex:

$$f(x) = x^n, n \neq -1$$

Power Chain Rule :

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

Ex:

$$n=-1 : f(x) = \frac{1}{x}$$

$$F(x) = \ln|x| + c$$

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