

Math 20100

Calculus I

Lesson 27

Indefinite Integrals

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Indefinite Integrals

The evaluation of $\int_a^b f(x) dx$ that we saw in the last lesson (using the antiderivative) leads us to use the following notation for antiderivatives:

$$\int f(x) dx = \text{the (general) antiderivative of } f(x).$$

$$\begin{aligned} \text{Ex. } & \int \left(3\sqrt{x} - \frac{5}{\sqrt{x}} \right) dx \\ &= \int (3x^{1/2} - 5x^{-1/2}) dx \end{aligned}$$

Ex. $\int \frac{\sin 2x}{\sin x} dx$ use $\sin 2x = 2 \sin x \cos x$



Work on this problem
on your own

$$\int \frac{2 \sin x \cos x}{\sin x} dx = \int 2 \cos x dx =$$

$$= 2 \sin x + C.$$