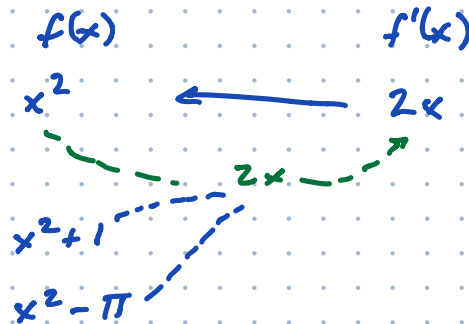


The indefinite integral

What is the antiderivative of $2x$?



General answer: $x^2 + C$ ← arbitrary constant

$$\int 2x \, dx = x^2 + C \quad \leftarrow \text{indefinite integral.}$$

$$\begin{aligned} \int_0^1 2x \, dx &= \left[x^2 + C \right]_0^1 \\ &= \overset{F(b)}{(1^2 + C)} - \overset{F(a)}{(0^2 + C)} \\ &= (1 + C) - (0 + C) \\ &= \underline{C - C} \\ &= 1 \end{aligned}$$