

<u>f(x)</u>	<u>f'(x)</u>
x^2	$2x$

What function am I thinking of?

Its derivative is $2x$.

$$x^2 + C$$

$$\int 2x dx = x^2 + C$$

$$\int \frac{x^2}{2} dx = \frac{x^3}{6} + C$$

or

$$\frac{1}{2} \int x^2 dx = \frac{1}{2} \left[\frac{x^3}{3} \right] + C$$

$$= \frac{x^3}{6} + C$$

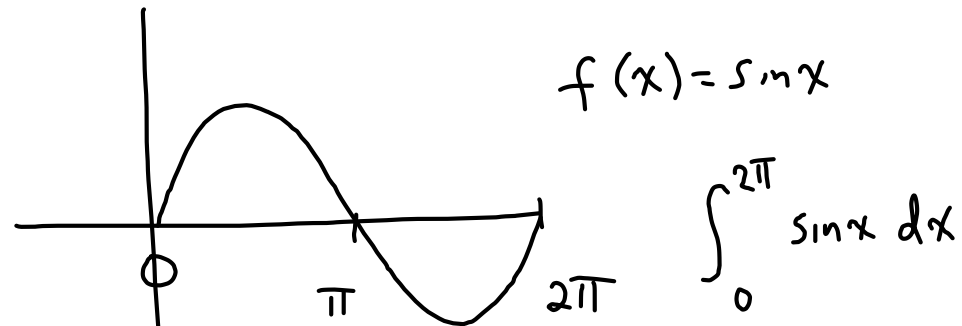
$$\int x^n dx = \frac{x^{n+1}}{n} + C$$

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

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

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

$$\int \frac{1}{2\sqrt{x}} \, dx = \sqrt{x} + C$$



Area from 0 to 2π bounded

by the x-axis and $f(x)$.

$$A = 2 \int_0^{\pi} \sin x \, dx$$

$$A = \int_0^{2\pi} |\sin x| \, dx$$

$$A = \int_0^{\pi} \sin x \, dx + \int_{2\pi}^{\pi} \sin x \, dx$$

$$A = \int_0^{\pi} \sin x \, dx - \int_{\pi}^{2\pi} \sin x \, dx$$