

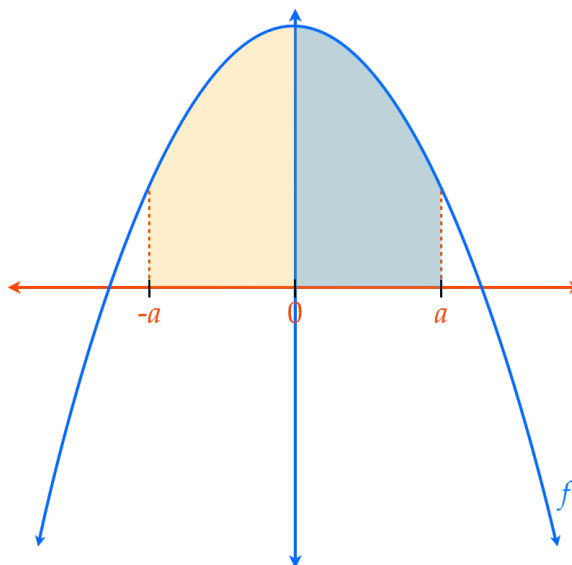
Integration of Even and Odd Functions

Let f be integrable on $[-a, a]$,

If f is an even function, then

$$\int_{-a}^a f(x) dx = 2 \cdot \int_0^a f(x) dx$$

Even functions are symmetric over the y -axis

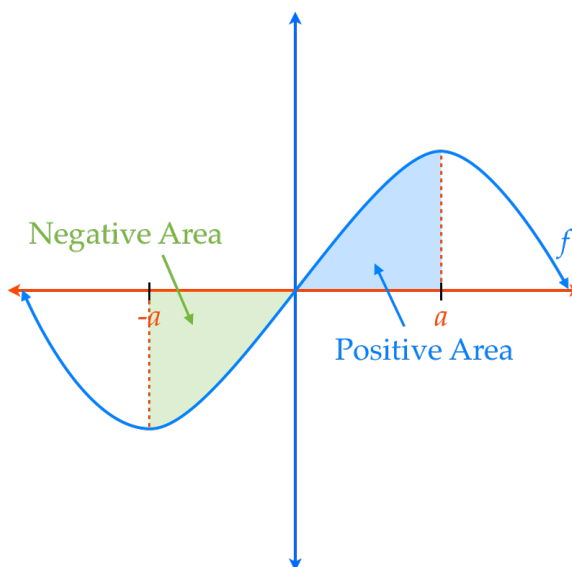


Let f be integrable on $[-a, a]$,

If f is an odd function, then

$$\int_{-a}^a f(x) dx = 0$$

Odd functions are symmetric over the origin



Evaluate the following definite integrals

$$\int_{-1}^1 \sin x \cos x \, dx = 0$$

Evaluate the following definite integrals

$$\int_{-3}^3 x^2(x^2 + 1) \, dx$$

Let f be integrable on $[-a, a]$,

If f is an even function, then

$$\int_{-a}^a f(x) \, dx = 2 \cdot \int_0^a f(x) \, dx$$

Even functions are symmetric over the y -axis

$$f(-x) = f(x)$$

If f is an odd function, then

$$\int_{-a}^a f(x) \, dx = 0$$

Odd functions are symmetric over the origin

$$f(-x) = -f(x)$$