

## Trapezoid rule

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$$\int_a^b f(x) dx \approx \frac{b-a}{2} [f(b) + f(a)]$$

$$\int_a^b f(x) dx \approx h \sum_{i=1}^n [f(a + ih) + f(a + (i - 1)h)], \quad h = \frac{b-a}{n}$$

$$= h \sum_{i=1}^{n-1} f(a + ih) + h \frac{f(a) + f(b)}{2}$$

The Trapezoid numerical Integration method uses trapezoids to approximate the integral.

### Symbol list:

- n      Number of subintervals
- $f(x)$       Function that is integrated