

## Adaptive quadrature

Goal: Approx.

$$I(f) = \int_a^b f(x) dx$$

up to a certain tolerance  $\epsilon$  as efficiently as possible

i.e.: with the least number of function  $f$  evaluations as possible (because they can be computationally expensive)

Idea: Instead of dividing the interval  $I = [a, b]$  into equally sized subintervals, put more subintervals where the function  $f(x)$  varies "faster" / the quadrature error is greatest.