Questions for discussion, week 40

September 29, 2020

Exercises

Exercise 1. We consider the integral

$$I(f) = \int_a^b f(x)\mathrm{d}x$$

a) How can you derive a rule for approximating this integral numerically? What assumptions are you making?

b) Would you use a composite rule?

c) Would you use random or deterministic nodes?

Exercise 2. We consider Gaussian quadrature rules.

a) What is the advantage of Gaussian quadrature rules compared to many of the other quadrature rules we have considered?

b) Are there situations where Gaussian quadrature rules are not applicable?