

The QE of a CQR is (obviously) the sum of QEs over each subinterval.

One can show that

$$E^N[f] = |Q_N^N[f] - I[f]|$$

$$\leq \frac{\|f^{(q+1)}\|_\infty}{(q+1)!} (b-a) h^{q+1} = \frac{\|f^{(5)}\|_\infty}{5!} (b-a) h^5$$

\swarrow DoE
 \swarrow order of accuracy

Ex.: (13) Compute approx. of $\int_0^1 \frac{1}{1+x} dx = \log(2)$

\rightsquigarrow 5 slides