Error estimate for the trapezoidal rule **(5.37)**

If f'' is continuous and if M is a positive real number such that $|f''(x)| \leq M$ for every x in $[a, b]$, then the error involved in using the trapezoidal rule (5.36) is not greater than

$$\frac{M(b-a)^3}{12n^2}.$$

Error estimate for Simpson's rule (5.39)

If $f^{(4)}$ is continuous and if M is a positive real number such that $|f^{(4)}(x)| \leq M$ for every x in $[a, b]$, then the error involved in using Simpson's rule (5.38) is not greater than

$$\frac{M(b-a)^5}{180n^4}.$$