

## Error Formulas

Trapezoidal Rule Error:

$$|E_T| \leq \frac{K(b-a)^3}{12n^2} \text{ where } |f''(x)| \leq K \text{ for } a \leq x \leq b$$

Midpoint Rule Error:

$$|E_M| \leq \frac{K(b-a)^3}{24n^2} \text{ where } |f''(x)| \leq K \text{ for } a \leq x \leq b$$

Simpson's Rule Error:

$$|E_S| \leq \frac{K(b-a)^5}{180n^4} \text{ where } |f''''(x)| \leq K \text{ for } a \leq x \leq b$$