

Numerical Integration

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Primary Topics

- Basic concepts
- Newton Cotes Rules
 - ▷ Trapezoid rule
 - ▷ Simpson's rule
- Gaussian Quadrature
- Adaptive Quadrature
- Improper Integrals

Figure 11.2

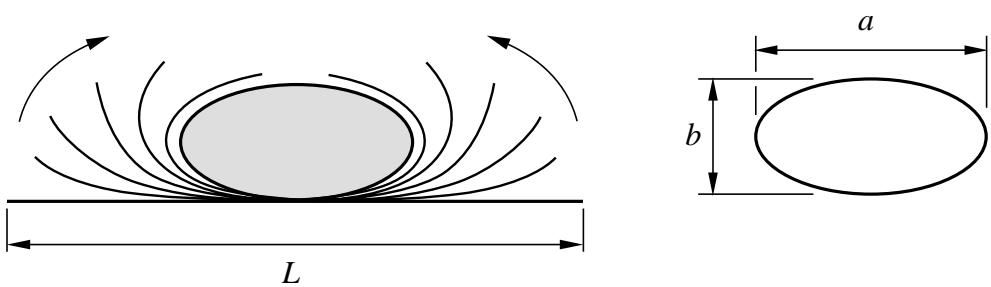


Figure 11.3

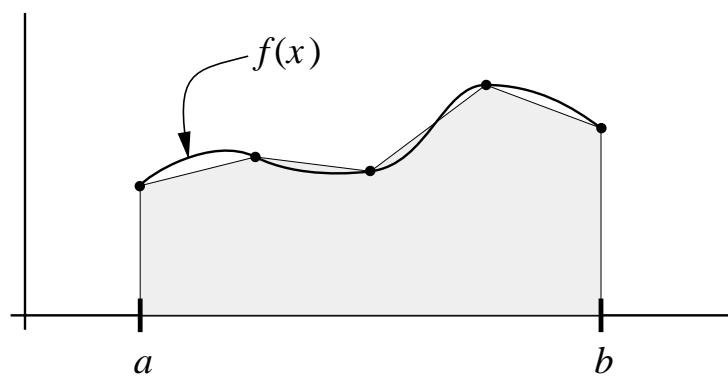


Figure 11.4

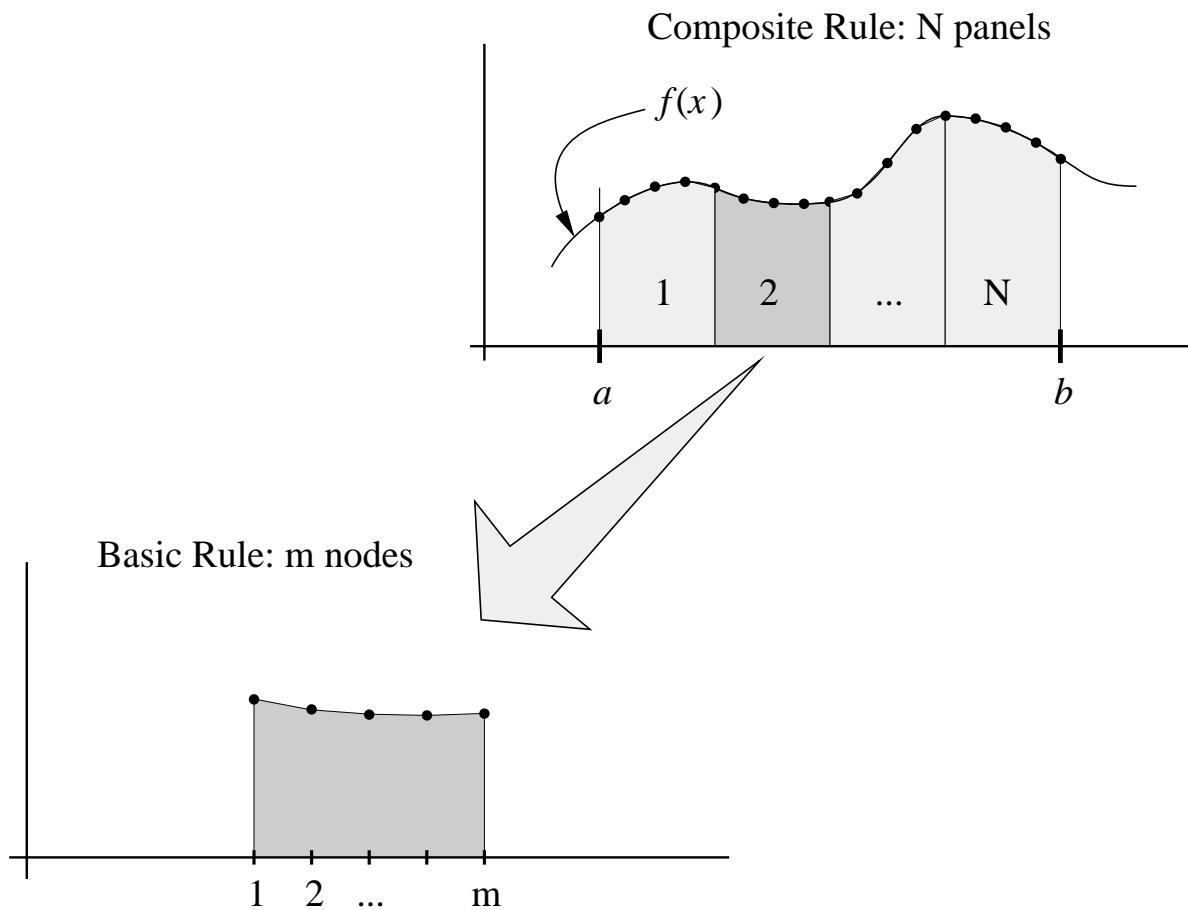


Figure 11.5

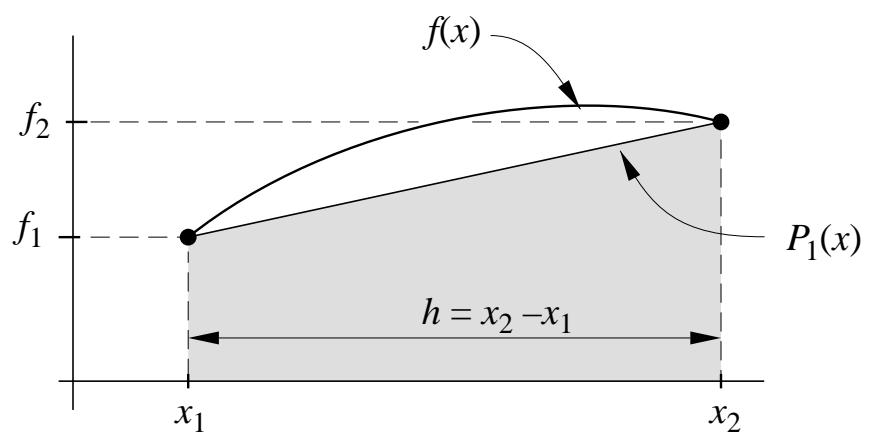


Figure 11.6

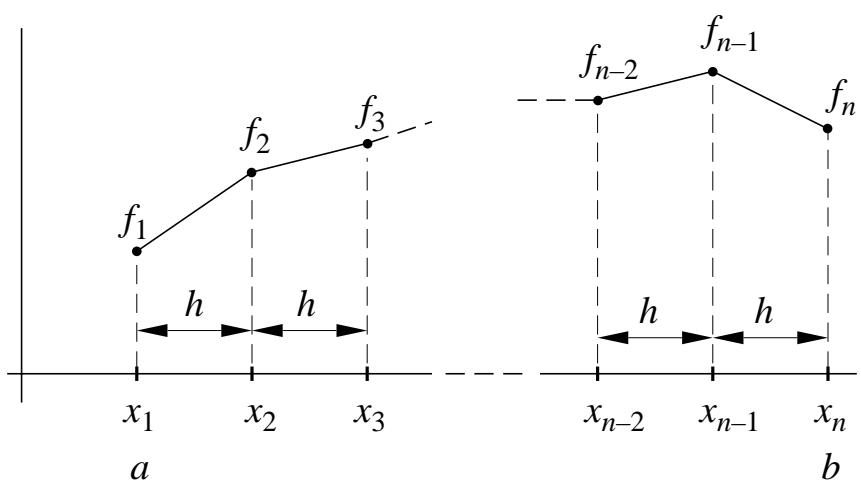


Figure 11.7

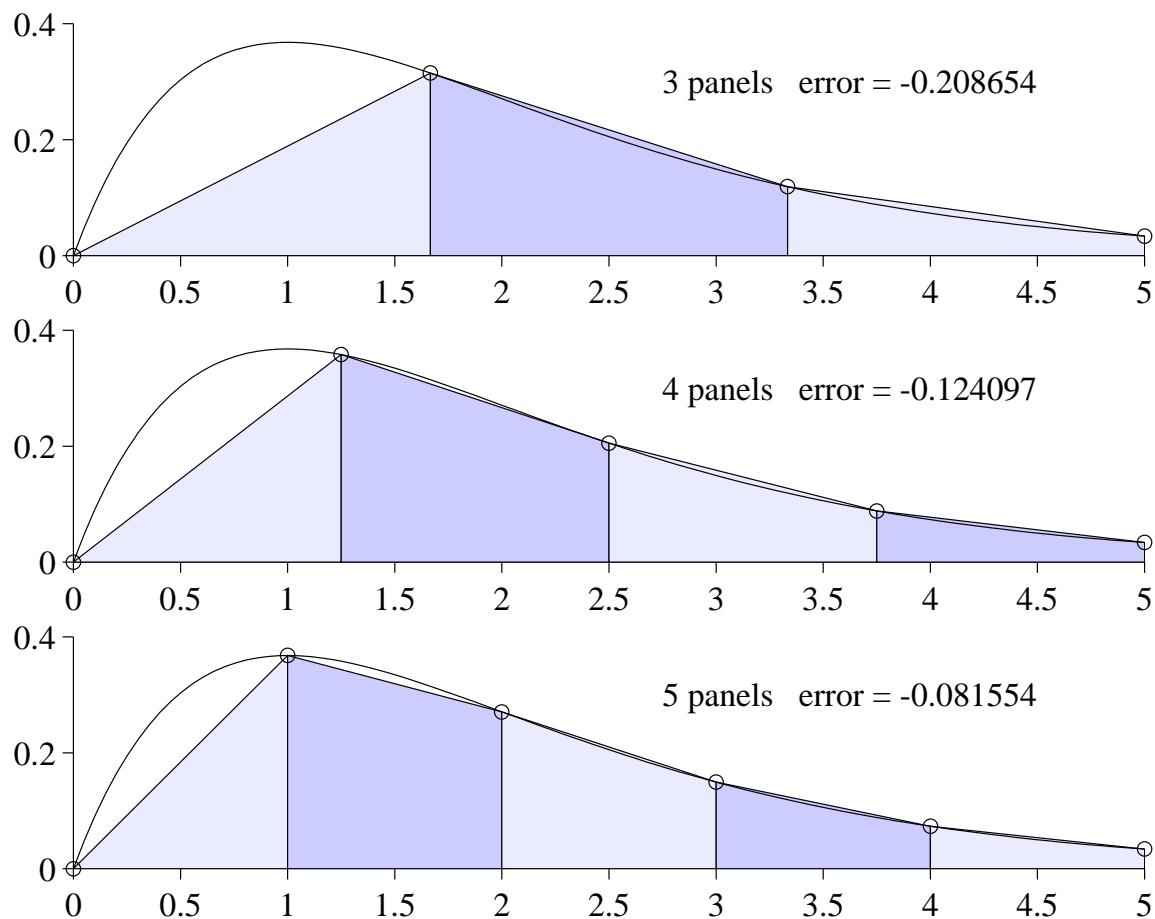


Figure 11.8

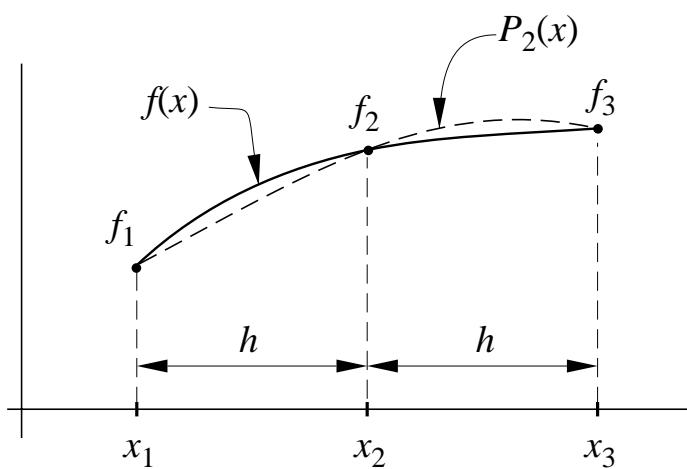


Figure 11.9

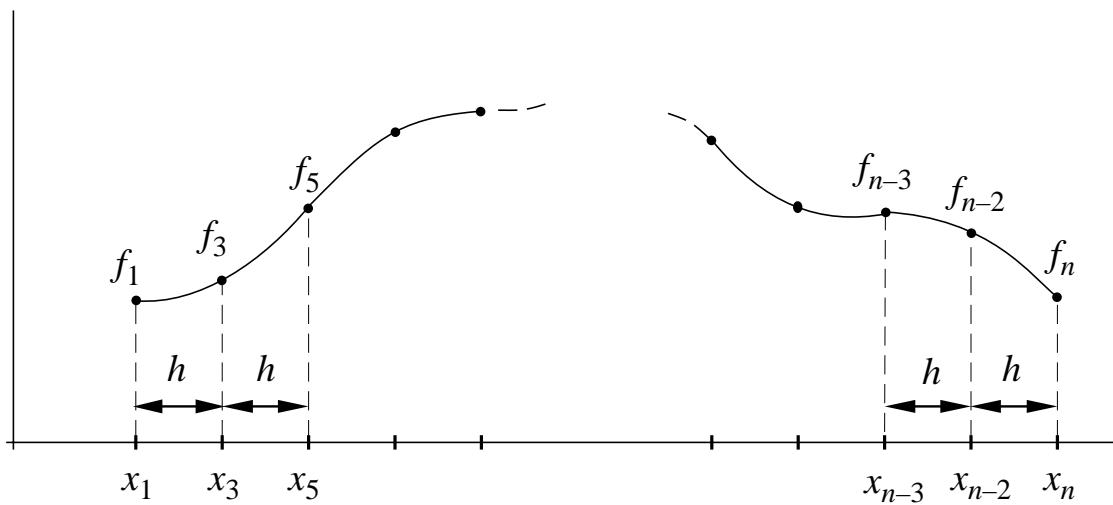


Figure 11.10

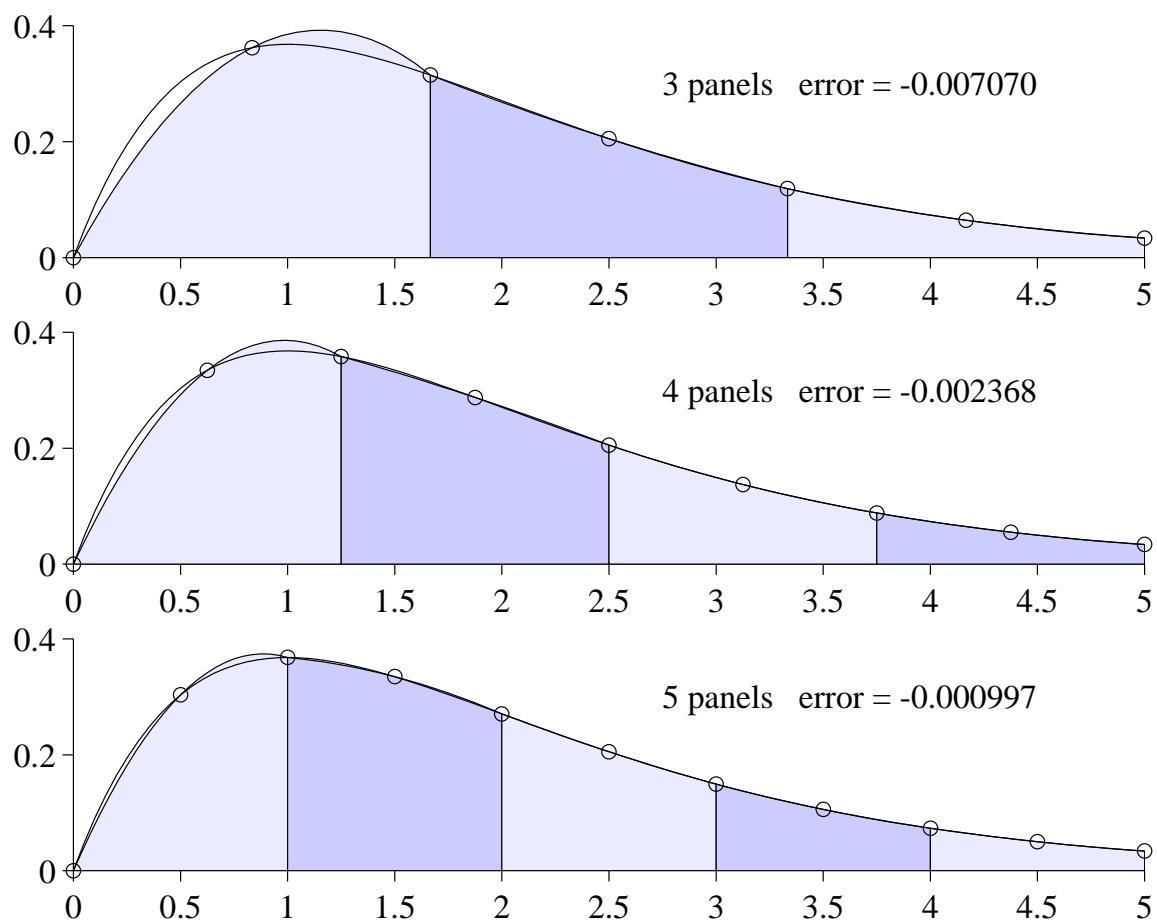
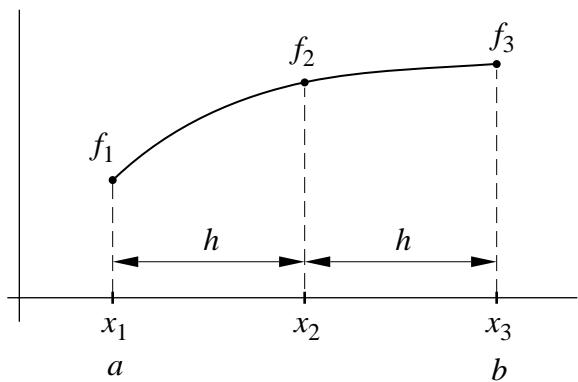


Figure 11.11

Three point closed rule $h = \frac{b-a}{2}$



Three point open rule $h = \frac{b-a}{4}$

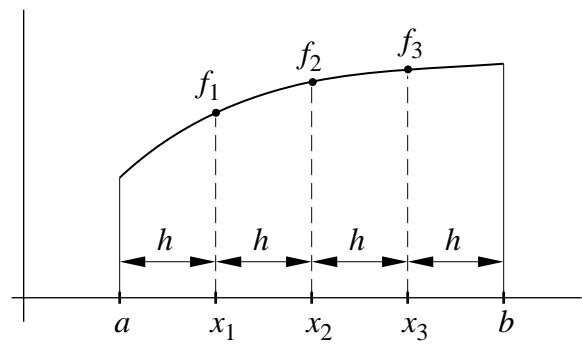


Figure 11.12

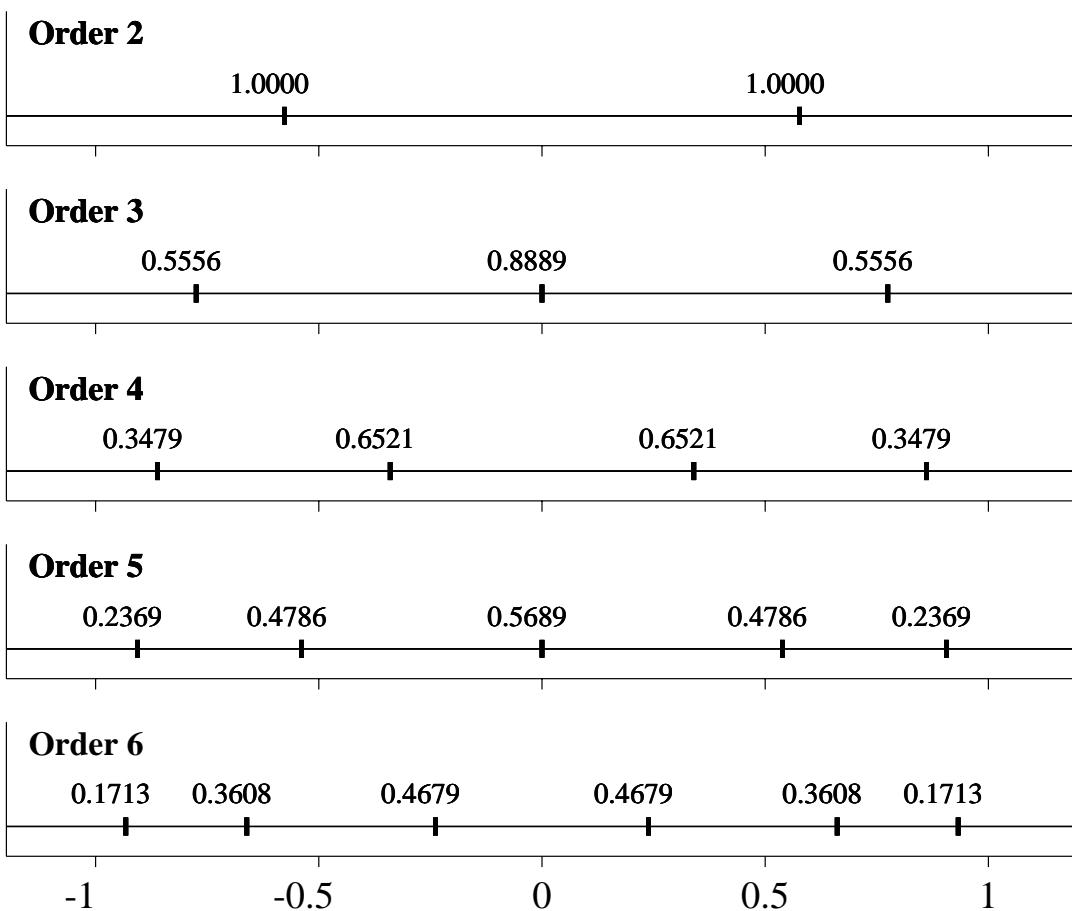


Figure 11.13

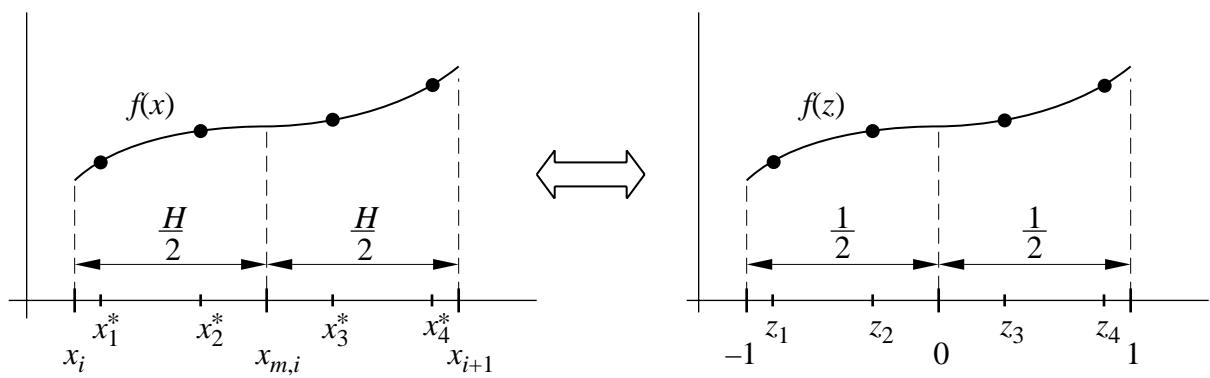


Figure 11.14

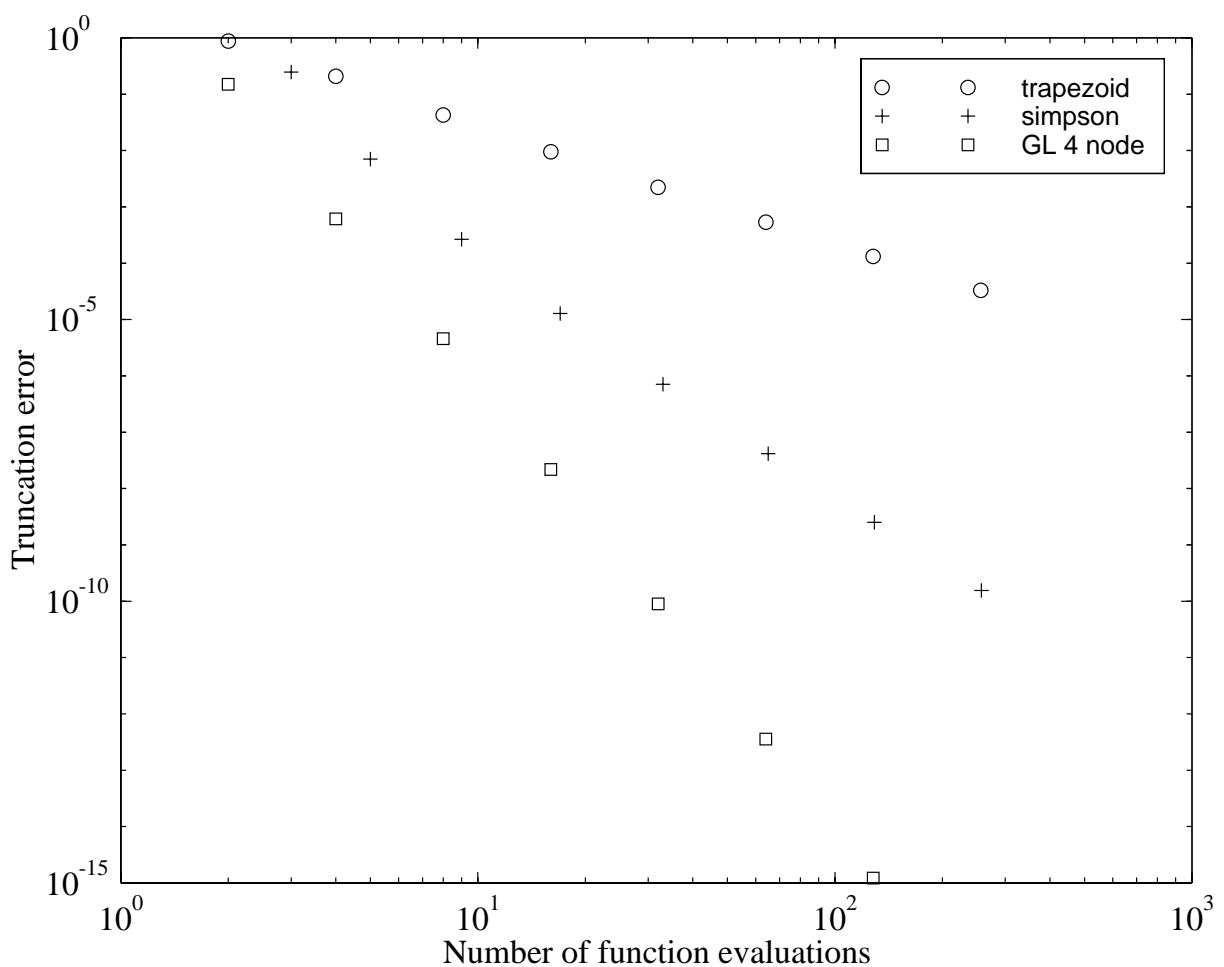


Figure 11.15

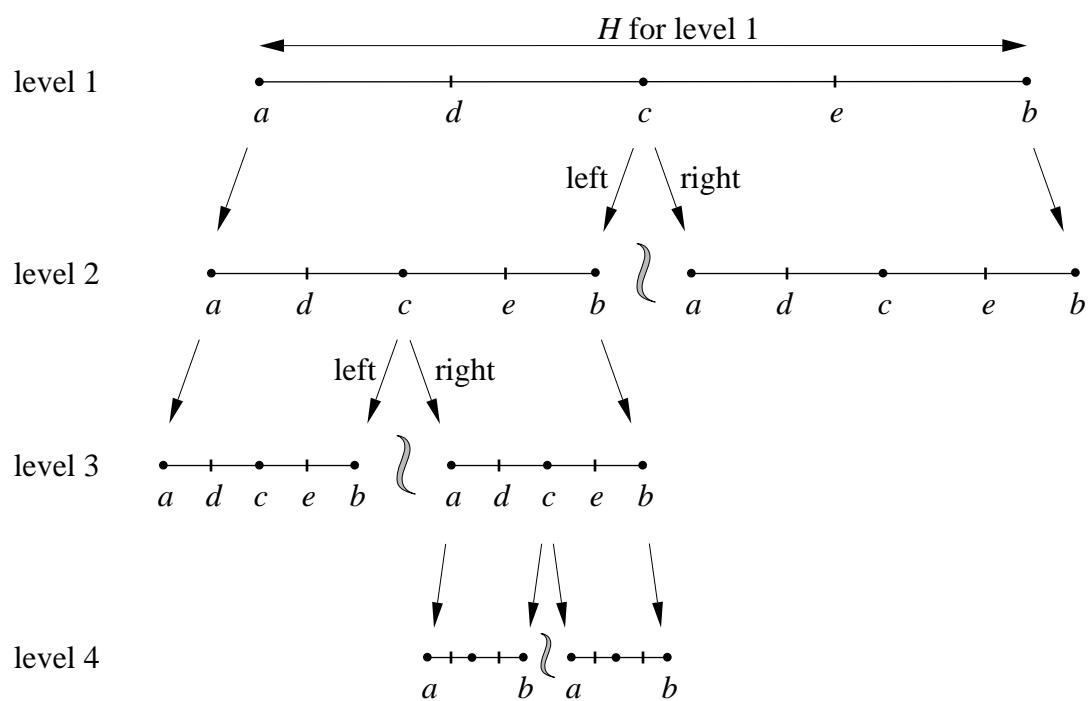


Figure 11.16

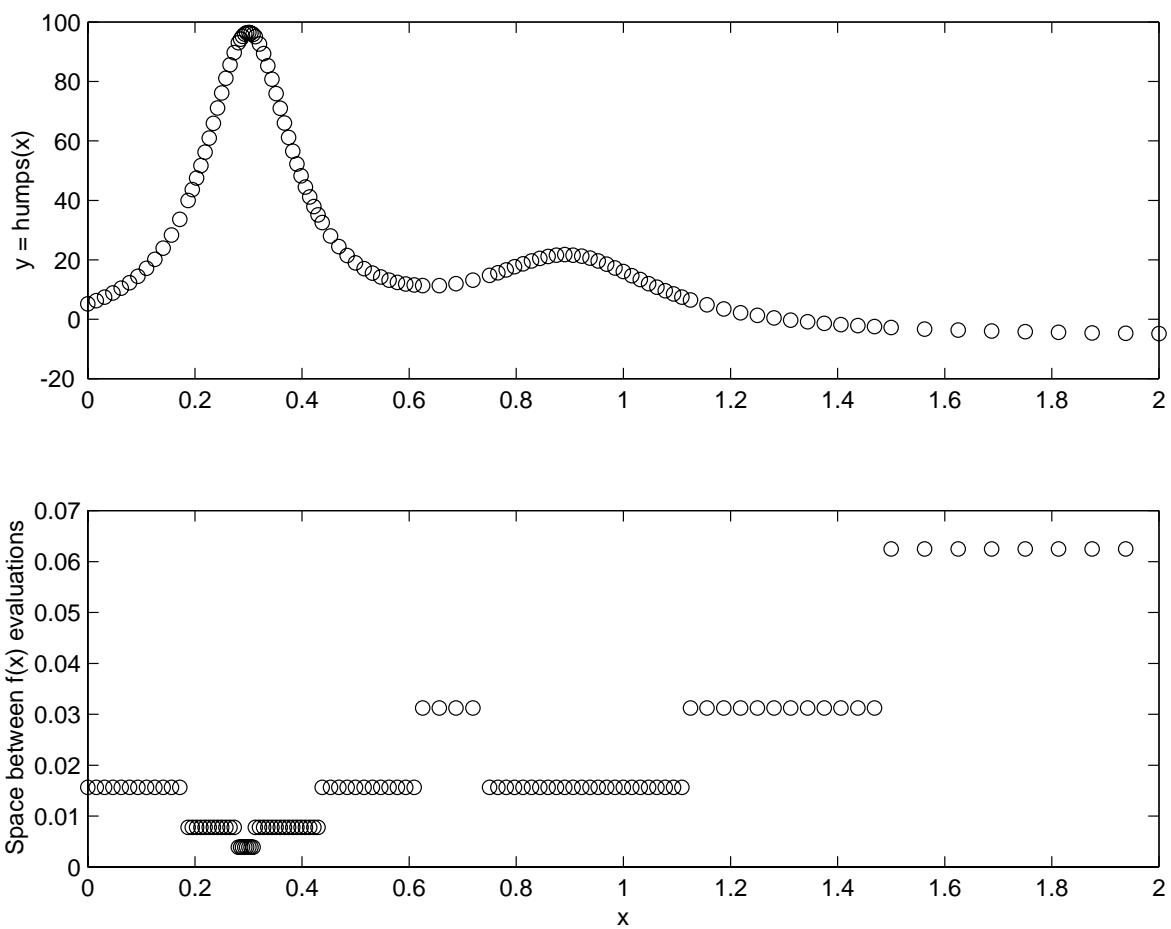


Figure 11.17

