

Adaptive quadrature (~ Pseudo-MATLAB-Code)

Function  $Q = \text{adapt\_quad}(f, a, b, \text{tol})$

$Q_1 = \text{quad1}(f, a, b)$  method 1

$Q_2 = \text{quad2}(f, a, b)$  method 2

$E = \text{abs}(Q_1 - Q_2)$

if  $E < \text{tol}$

$Q = Q_2$  (keep the more precise result)

else

$Q_L = \text{adapt\_quad}(f, a, \frac{a+b}{2}, \frac{\text{tol}}{2})$

$Q_R = \text{adapt\_quad}(f, \frac{a+b}{2}, b, \frac{\text{tol}}{2})$

$Q = Q_L + Q_R$

end  
end