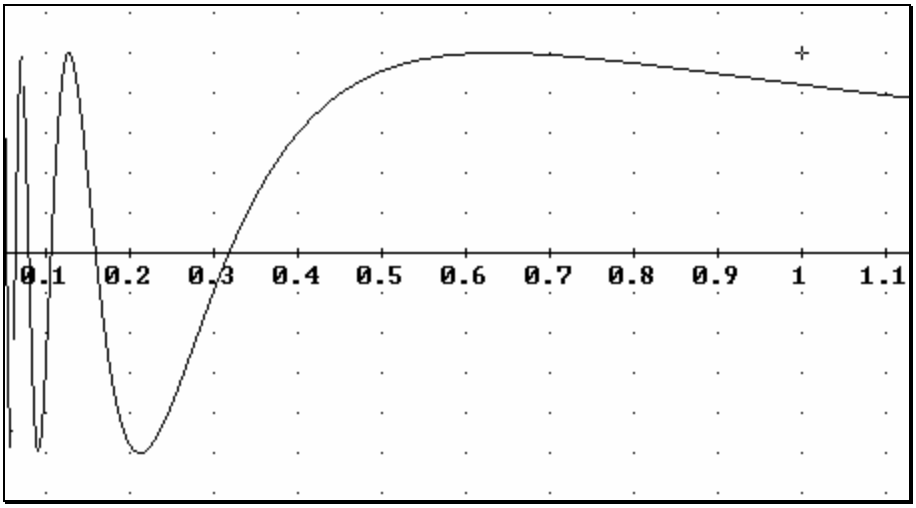
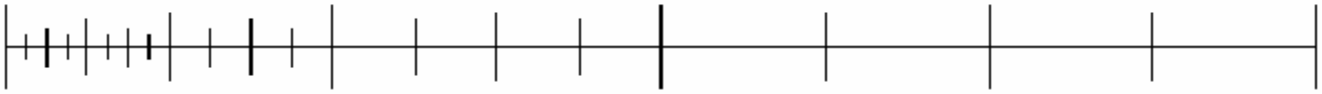
Graphical Example of Adaptive Quadrature - Prof. Richard B. Goldstein

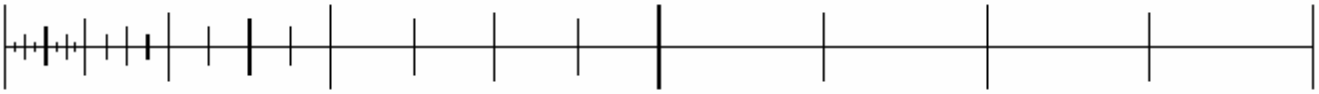


Problem: Estimate $\int_{0.1}^{1.1} \sin\left(\frac{1}{x}\right) dx$

Case #1 : TOL = 0.01 INT = 0.5948186



Case #2 : TOL = 0.002 INT = 0.5944648



Case #3 : TOL = 0.0002 INT = 0.5943949

Using TOL = 10^{-6} INT = 0.5945061

DERIVE TOL = 10^{-7} INT = 0.5945062

Fraction of the line in 256th 's in the order of evaluation (case #3) :

0	256	128	64	192	32	96	16	48	8	24	4	12
2	6	1	3	5	7	10	14	20	28	40	56	80
112	160	224										