

Romberg's Method - Prof. Richard B. Goldstein

$$\int_1^4 3\sqrt{x} dx = 14$$

Trapezoid Evaluations - Romberg's Method

1	13.5000000000000						
2	13.8651247353789	13.9868329805052					
4	13.9652777775341	13.9986621249192	13.9994507345468				
8	13.9912400354208	13.9998941213831	13.9999762544806	13.9999845960669			
16	13.9978045913942	13.9999927767187	13.9999993537410	13.9999997203960	13.9999994443264		
32	13.9994508003019	13.9999995366045	13.9999999872635	13.999999973194	13.999999984054	13.9999999902811	
64	13.9998626782030	13.9999999708367	13.999999997855	13.999999999843	13.999999999947	13.999999999962	

Errors

1	5.0000E-01						
2	1.3488E-01	1.3267E-02					
4	3.4722E-02	1.3379E-03	5.4927E-04				
8	8.7600E-03	1.0588E-04	2.3746E-05	1.5404E-05			
16	2.1954E-03	7.2233E-06	6.4626E-07	2.7960E-07	5.5568E-07		
32	5.4920E-04	4.6340E-07	1.2736E-08	2.6805E-09	1.5946E-09	9.7189E-09	
64	1.3732E-04	2.9163E-08	2.1454E-10	1.5785E-11	5.3344E-12	3.7801E-12	