
```
% Problem 4d
close all
clear
clc
format long
n = [4 8 16 32];
fun = @(x) 2.*x.*cos(x);
a = 1;
b = 3;
realSum = integral(fun,1,3);
for i = 1 : length(n)
    approxSum(i) = comp_gauss_quad(fun,a,b,n(i));
    error(i) = abs(realSum - approxSum(i));
end
% Tabulating n, sum and error
Gauss_Quadrature = table;
Gauss_Quadrature.N = n';
Gauss_Quadrature.SUM = approxSum';
Gauss_Quadrature.ERROR = error'
```

Gauss_Quadrature =

<i>N</i>	<i>SUM</i>	<i>ERROR</i>
—	—	—
4	-3.8968114127	1.1349376105585e-07
8	-3.8968115244365	1.75725567430618e-09
16	-3.89681152616637	2.7394086998811e-11
32	-3.89681152619333	4.2721381987576e-13

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