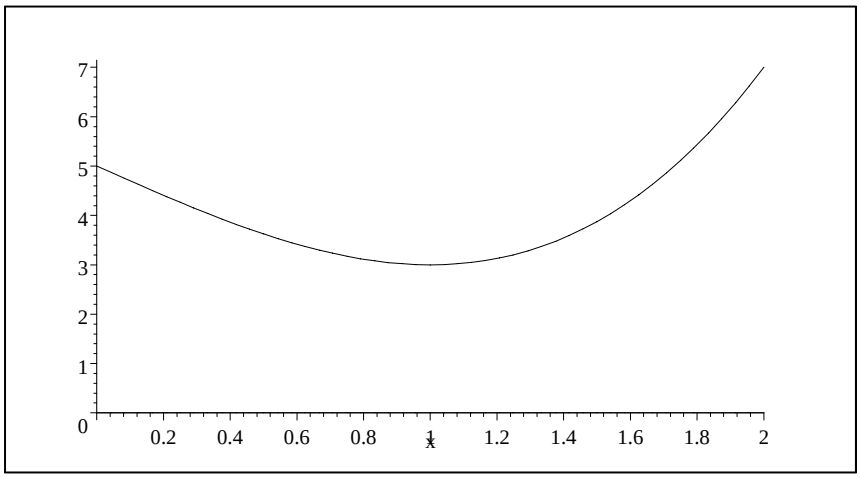
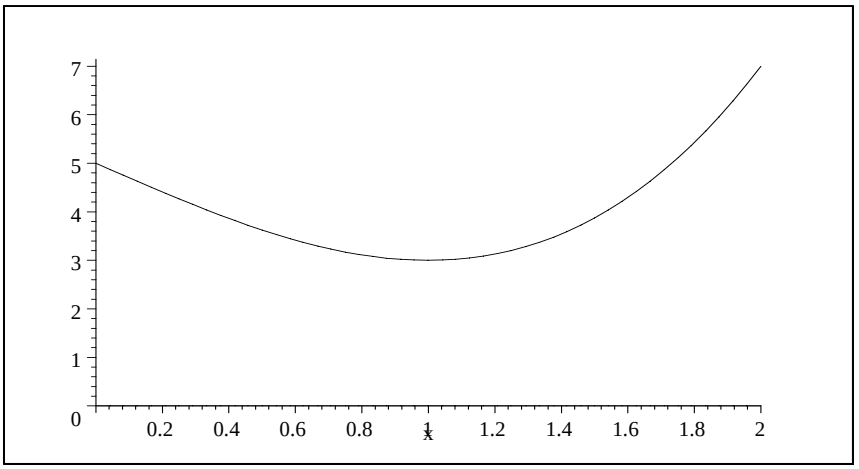
MA 112 - Calculus II
Worksheet #3
Professor Broughton

Name:_____ Box #:_____

Numerical integration

1. Let $f(x) = x^3 - 3x + 5$. On the graphs of $f(x)$ below sketch the approximating areas for the trapezoidal rule and Simpson's rule using 4 subdivisions.





2. For the function and interval above calculate the Trapezoidal and Simpson's approximations and their errors in the table below.

n	T_n	S_n	ET_n	ES_n
4				
8				
16				
32				
128				
1024				

Comment on the results

3. Here is a table of x and y data.for $y = g(x)$ estimate $\int_a^b g(x)dx$ using both the Trapezoidal rule and Simpson's rule.

x	1	1.5	2	2.5	3	3.5	4	4.5	5
y	3.12	2.74	2.12	1.51	1.26	0.77	0.13	-0.59	-1.37