CMPT/MATH 420: Numerical Analysis

Laboratory 8

Due: End of Lab Period Nov. 7

1. Write a function `BasicSimpsons(f, a, b)` that takes a continuous function on the interval $[a, b]$ and returns the approximation for $\int_a^b f(x)dx$ using basic Simpson's Rule.

2. Test your function to approximate the following integrals:

   - $\int_1^5 \left(\sin(x) - 1 + \sqrt{x}\right) dx$,
   - $\int_1^e \frac{\sin(x)}{x} dx$, and
   - $\int_1^e e^{x^2} dx$.