MA 428: Project 1: Numerical Integration - error term analysis

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Reading: Section 6.5
Your presentation will focus on material on pages $472 - 475$ (ignore the section on Periodic integrals). This section focusses on determining the number of subintervals that you need in order to achieve a given level of accuracy using both the composite Trapezoidal and Simpson's rules.
In your presentation:

1. Introduce the idea of composite Quadrature rules
2. Motivate the problem - i.e Think about why it is useful to figure out how many subintervals one needs to compute a given integral to a specified accuracy.
3. In addition answer the following questions:
   (a) How is the error term in the error term used to determine the number of subintervals required to achieve a given level of accuracy. You may use Example 6.12 but you will need to implement and verify this using MATLAB.
   (b) Do problem 17 in Section 6.5 (for Trapezoidal and Simpson's Rule) and include the results in your presentation – give the number of subintervals required for each method and comment on the difference between the 2 numbers.