Exam 3 Objectives

For Exam #3, a well-prepared student should be able to

- apply a variety of tools and strategies to the problem of finding an antiderivative for a given function, including
  - knowledge of basic derivative/antiderivative pairs
  - basic substitution
  - integration by parts
  - trigonometric substitution
  - re-expression of trigonometric functions using trigonometric identities
  - re-expression of a rational functions using division and partial fractions
- understand how simple methods of numerically approximating a definite integral can be combined to get better approximation methods
- understand how error, error bound, and tolerance are related for a numerical approximation of a definite integral
- compute a numerical approximation for a given definite integral that has error less than a given tolerance
- compute an Euler method approximation for the solution of a given first-order differential equation with a given initial condition