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## Homework 2

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- No "Collaborative" effort allowed. Students are expected to work themselves.
  - Its okay to discuss, but not okay to share code or ask others to code for you!!!
  - Penalty for late submissions.
  - *Severe penalty for academic dishonesty.*
1. Consider a function  $f(x) = \sin(x)$  in the interval  $[0, \pi]$ . The same one from Homework 1. Write an MPI Code to numerically integrate the function using the
    - (a) Trapezoidal Rule
    - (b) Montecarlo Method
  2. Perform a convergence study, using different numbers of divisions (or sampling points), by comparing the integral obtained the numerical method with the analytical integral.
  3. Perform a timing study using 2,4,6 and 8 MPI processes. Be sure to report average times of at least 5 runs of the code.
  4. Write a report of results obtained. Only PDF copies of report and codes are to be emailed in a single zip / tar file.