

**E517/317 – Introduction to High Performance Computing
Fall 2019**

Assignment 4

1. Write an embarrassingly parallel code using MPI which computes the first 10 digits of pi (i.e. 3.14159 ...). Run it on Bigred2 and submit the strong scaling performance plot.
2. Write an MPI code to integrate $\cos(x) \times \sin(2x)$ on the interval between 0 and $\frac{\pi}{2}$ to an accuracy of at least $1e-6$. Plot the strong scaling of the code from 1 to 64 processes on Bigred2.

HINT: You can use something like the Trapezoidal rule
https://en.wikipedia.org/wiki/Trapezoidal_rule