ME 766 : HW 1 : Due: 23:59 hrs Monday, 1/03/2021 : Upload to Moodle

- 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 $f(x) = cos(x)$ in the interval $[-\frac{\pi}{2}, \frac{\pi}{2}]$. Write serial and OpenMP parallel codes 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 OpenMP threads. Be sure to report average times of at least 5 runs of the code.
4. Write a short report of results obtained. Only PDF copies of report and codes are to be uploaded to moodle in a single zip / tar file.