Assignment 7

Due: 6th April.

1 A serial code run in parallel

Write a code in *C/C++* that finds *all* the roots of

$$f(x) = x\cos\left(x^3 - 5\right)$$

in the interval $[0, 5]$.

- (*5 Points*) Plot the function to first estimate the starting points visually.
- (*15 Points*) Write a serial code that finds the roots (name your code as *V1.cpp*).
- (*15 Points*) Write a script with a function that runs a modification of the previous code (name your code as *script1.sh* and the modified one as *V2.cpp*) where the arguments of the different intervals (for each root) are given as parameters, such that the computations are performed in parallel.
- (*15 Points*) Use GNU Parallel (name your code as *script2.sh*) to run *V2.cpp*.

Note: Assume you can only use **two** CPUs at a time.