Task 1

a) Time = 11.07s, params: zoom = 100%, iter=1024, res = 2048, x=0.5, y = 0.5
b) Time = 1.73s, same params. As I can tell the subdivision do not impact the performance much, but the block dimension has a heavy performance hit. This is probably because a large block dimension gives a low number of possible subdivisions and the sub division is used in a logarithm giving it a lower impact.

Task 2

b) For Mariani-Silver the run time was 3.91s, and for escape-time 10.5s. This is tested in a VM with only 1 CPU, this is likely why the run time was not any better than for the baseline.

Task 3

I placed the timing logic inside the serial function. This is because first I tried inside the case in the switch, this did not work, and for a most accurate timing I wanted it as close to the calculations as possible so inside the calculation function is where I placed it. Usage = 0.91s

Task 4

With OMP usage = 0.62s. For few threads there is some time going into the parallelization administration, but in entirety this is not that much and will be a smaller part with more threads.

Task 5

With blas the speedup to a time usage = 0.12s. The speedup with BLAS is that the amount of data used is lower than the number of operations in comparison. The BLAS library have optimized the BLAS functionality on many levels making use of maybe AVX instructions or other optimizations for the platform giving the incredible speedup.