

# Programming Homework 1 Report

## Part 1a

Execution times for  $n = 2048$  are 72.4s, 58.7s, 59.1s

Performance: 237 MFlops/s, 293 MFlops/s, 290 MFlops/s  
performed over 3 runs

## Part 1b

Execution times for  $n = 2048$ ,  $b = 4, 8, 16$  are 54.5s, 49.6s, 47.9s

Performance: 315 MFlops/s, 346 MFlops/s, 358 MFlops/s  
respectively, performed over 3 runs

## Conclusion

Comparing the results in a plot, the execution times for Block Matrix Multiplication were less than Naive Matrix Multiplication, with even more decreasing times as  $b$  increases.

Furthermore, the performance for Block Matrix Multiplication was better than Naive Matrix Multiplication and was proportional to  $b$  as  $b$  increases.

## Question 2

Execution time for 30 iterations are 0.19s, 0.18s, 0.19s