Andrew Alferman
CS 575 Spring 2017
Project #0

1. Tell what machine you ran this on
    - The machine was a MacBook Pro (Retina, 13-inch, Early 2015) with a 2.9 GHz Intel Core i5 processor running macOS Sierra Version 10.12.3 with 8 GB 1867 MHz DDR3.
2. What performance results did you get?
    - Using 1 thread:
      The peak performance was 392.08 MegaMults/Sec
      The average performance was 330.18 MegaMults/Sec
    - Using 4 threads:
      The peak performance was 1015.85 MegaMults/Sec
      The average performance was 718.43 MegaMults/Sec
3. What was your 4-thread-to-one-thread speedup?
    - When comparing peak values, the speedup was 2.591.
    - When comparing average values, the speedup was 2.176.
4. Why do you think it is behaving this way?
   The performance improved when four threads were used because more computations are being done in parallel than when one thread was used. The speedup ratio was less than four because additional computation was needed to divide the work between the four threads.
5. What was your Parallel Fraction, Fp?
    - The parallel fraction was 0.819 when computed using peak performance values, and was 0.721 when computed using average performance values.