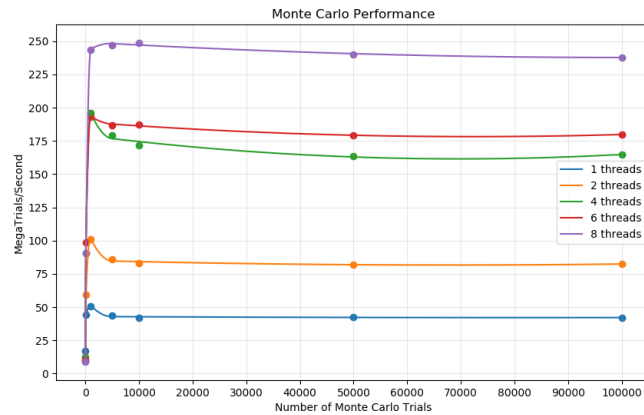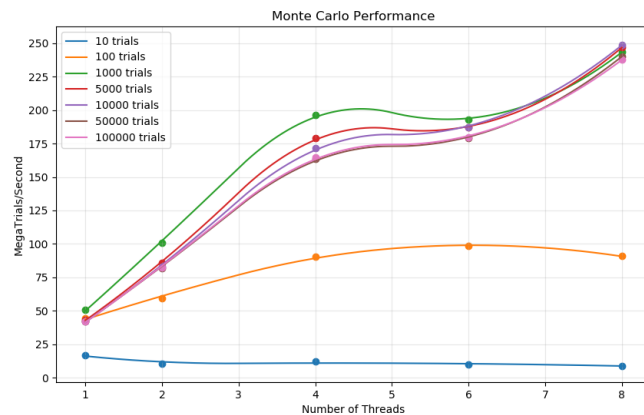# CS 575 Project 1

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1. Estimate of the probability running 1000000 Monte Carlo is 0.131.

2. The following graph shows the performance in MegaTrials per Second versus the number of trials for different number of threads.

3. The following graph shows the performance in MegaTrials per Second versus the number of threads for different number of trials.

4. The below calculation shows the calculation of the parallel fraction for going from 1 thread to 8 threads

when running 100000 trials.

$$S_8 = \frac{Perf_8}{Perf_1} = \frac{237.737}{42.069} \approx 5.6511$$

$$F = \frac{8}{8-1}\left(1 - \frac{1}{S_8}\right) = \frac{8}{7}\left(1 - \frac{1}{5.6511}\right) \approx .9406$$