**PI\_MPI.c (Runtime vs Number of Processes)**



**PI\_MPI.c (Speedup Factor vs Number of Processes)**

**Speedup Calculated using Pi\_Mpi.c runtime**

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**PI\_MPI\_COMM.c (Computation Time vs Number of Processes)**

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**PI\_MPI\_COMM.c (Communication Time vs Number of Processes)**

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**PI\_MPI\_COMM.c (Speedup Factor for Compute)Time vs Number of Processes)**

**Speedup calculated using Compute\_Time values for PI\_MPI\_COMM.c**

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This speedup plot is similar to the speedup plot in Part 3. However the max amount of speed is higher for this chart because it only considers the computation time. Computation time is parallelizable. In part 3, we consider total program time, including the non-parallelizable communications overhead. Therefore we see a higher overall speedup for this chart, which only considers a parallelizable part of the program.