**Assignment 1 – Report**

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1. **Experiment**

The task is to compute in parallel the two-dimensional integral

By the midpoint rule,

In the solution, by given *p* processes, we divide the processes into a *p*×1 mesh and assign a strip of the computational domain to each of them to compute a partial sum, and then collect the local sums into one process, which will know the answer.

1. **Results**
2. Correctness



The exact answer is

1. Fixed size problem



(Intel(R) Xeon(R) CPU E5520 @ 2.27GHz, N = 100000)

1. Scaled size problem



(Intel(R) Xeon(R) CPU E5520 @ 2.27GHz)

1. **Conclusion**

The results shows that the solution has great accuracy with good strong scalability parallel performance.