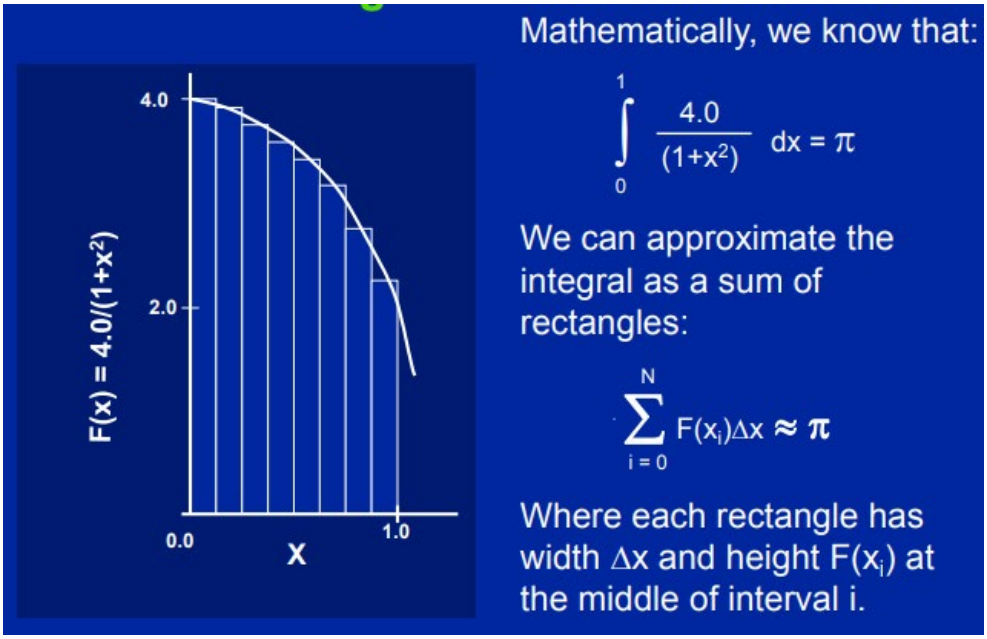
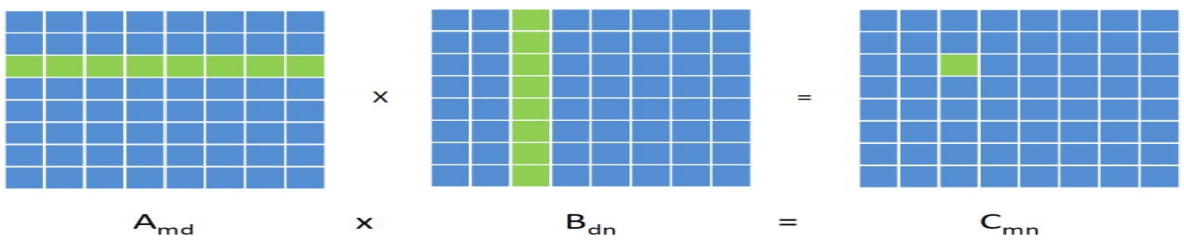
PI Calculation



Parallelize, using OpenMP parallel construct the provided serial code that calculates the value of PI. Pay close attention to shared versus private variables. In addition to a parallel construct, you will need the runtime library routines:

- int omp_get_num_threads();
- int omp_get_thread_num();
- double omp_get_wtime(); // To compare the time between serial program and parallelized program.

Matrix Multiplication



$$c_{i,j} = \sum_{k=1}^{d} a_{i,k} \cdot b_{k,j}$$

Use OpenMP to parallelize the provided matrix-multiplication code where possible. Add printf instruction to indicate each thread the task is performing (e.g, filling the element, multiplying the elements, etc).

In addition to a parallel construct, you will need the runtime library routines:

- int omp_get_num_threads();
- int omp_get_thread_num();
- double omp_get_wtime(); // To compare the time between serial program and parallelized program.

Note: The three matrices are shared data, meaning that all threads can read and write them.

Square Elements of an Array

Parallelize the provided serial code using OpenMP pragmas.