* [pi\_serial.c](http://www.sqrlab.ca/exercises/csci4060u-w17/pi_serial.c) – a serial program for calculating pi as the sum of area’s of rectangles under a curve.
* [pi\_parallel\_v1.c](http://www.sqrlab.ca/exercises/csci4060u-w17/pi_parallel_v1.c) – parallelization of the serial pi program using the parallel directive.
* pi\_parallel\_v2.c – improving the performance of pi\_parallel\_v1.c. The original program suffers from “false sharing” between array elements on the same cache line. This program uses an architecture specific solution (padding) to solve the problem.
* pi\_parallel\_v3.c – parallelization of the serial pi program using the parallel directive and a critical region.
* [pi\_parallel\_v3b.c](http://www.sqrlab.ca/exercises/csci4060u-w17/pi_parallel_v3b.c) – the danger of placing critical regions in loops is demonstrated in this program. This is not a best practice :).
* [pi\_parallel\_v3c.c](http://www.sqrlab.ca/exercises/csci4060u-w17/pi_parallel_v3c.c) -this is the same program as in pi\_parallel\_v3.c with the addition of compiler directives to allow for the program to be compiled with a C compiler that does not support OpenMP.
* [pi\_parallel\_v4.c](http://www.sqrlab.ca/exercises/csci4060u-w17/pi_parallel_v4.c) – parallelization of the serial pi program using the parallel directive and an atomic statement.
* [pi\_parallel\_v5.c](http://www.sqrlab.ca/exercises/csci4060u-w17/pi_parallel_v5.c) – parallelization of the serial pi program using the parallel directive and a parallel for loop (with a reduction).