

HOMEWORK #5, MATH 441, FALL 2018

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Please note:

- (1) You may work collaboratively on the software in this assignment, but you must **make your own comments** and run your software individually.
- (2) You must acknowledge with whom you worked. You must also acknowledge any sources you have used beyond the textbook and class material.
- (3) In all these problems you must **justify your answer** and **make comments on your software** so that it can be read.
- (4) Submit the entire homework as a single PDF file to `canvas.ubc.ca`.

HOMEWORK PROBLEMS

Recall from Homework 4 that we solved the following Latin square problem:

1	?	?	3	?
?	1	?	?	?
?	?	?	?	?
?	?	?	?	?
?	?	?	2	?

- (1) Use your software to produce 4 different solutions to the Latin square problem.

[Hint: there are many ways to do this: one way is to add a randomized objective function to be maximized (see our code for class presentations, which added some randomization to the objective function in order to fairly break ties); another way to do this—which is a bit more tedious—is to set some of the ?’s above to specific values (from 0, 1, 2, 3, 4 or from 1, 2, 3, 4, 5, depending on your software).]

You must explain why your 4 different solutions are distinct.

[Hint: one way to do this is to print out the solution as a 5×5 grid in the way that `sudoku.py` does; then you clearly see what your solutions look like, and it is easy to distinguish between the solutions.]

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