General comments on the programming question in the 2120 Final Exam

A proper solution to a programming question on the final exam will require using the **if-else** construction, a loop and an array. However, those who have difficulty implementing arrays (or loops) should first attempt a minimal version by choosing a fixed size for the data (namely, the smallest size for which the problem still makes a nontrivial sense) and then hardcoding the data. For more ambitious programs, interactive input or command-line input (or even input from a file) can be used.

Some evaluation benchmarks:

- A non-compilable program will be worth less than 50% even if the code is almost perfect. (That's harsh! Have a saved compilable verion at any time. Begin with a standard "frame". Print user's greeting and a faked result. Then develop incrementally.)
- A compilable program with logically consistent structure and a relevant user interface may be worth anywhere between 40% and 70%. The lower bound corresponds to virtually no mathematics implemented in the code; the upper bound corresponds to a code with a lot of good features, but yet mathematically incorrect in non-special cases.
- A minimal working and mathematically correct version (with initial data of fixed size and hardcoded) will be worth 65%. To qualify as "correct", the program should also produce the correct result if the data in the code is more or less arbitrarily changed (except possibly for some special cases — where, say, a division by zero can occur).
- A standard version (properly organized array and loop, correct if/else conditions, clear user prompt) will be worth no less than 94%.

After a basic functionality has been achieved, an effort should be made to make the program robust and tolerant to an erroneous user input. It would be also nice to demonstrate one's practical knowledge of command-line arguments. Providing (or not providing) good clear comments in the program file or on paper will significantly affect the overall mark.

Top scores will not be granted without fulfilling all these recommendations. Scores higher than 95% can only be given to programs that use programmer-defined functions in a meaningful way.

Last, but not least: The judgement will be basically made on only one version of your program, no matter how many files you'll create in your exam account. So please indicate clearly which file is your best version. If your most sophisticated and advanced version is not compilable, indicate a compilable version as best and provide further explanations on paper.