Instructions:

- All code is to use the Beginning Student language.
- Individual questions will indicate which design recipe components must be included for full marks. Unless otherwise specified, you can assume the following:
  - Helper functions only require a contract and a purpose.
  - Examples and tests must use check-expect, and unless otherwise allowed, must be different from any examples supplied in the question. Examples also count as test cases.
- Your functions do not have to check for values not specified by the contract unless we ask you to do so.
- Functions you write may use:
  - Any function you have written in another part of the same question.
  - Any function we asked you to write for a previous part of the same question (even if you didn’t do that part).
  - Any other built-in function or special form discussed in lecture, unless specifically noted in the question.
  - Any built-in mathematical function.
- Throughout the exam, you should follow good programming practices as outlined in the course such as appropriate use of constants and meaningful identifier names.
- You are not allowed to use if in any of your solutions.
- If you believe there is an error in the exam, notify a proctor. An announcement will be made if a significant error is found.
- It is your responsibility to properly interpret a question.
  - Do not ask questions regarding the interpretation of a question; it will not be answered and you will only disrupt your neighbours.
  - If there is a non-technical term you do not understand you may ask for a definition.
  - If, despite your best efforts, you are still confused about a question, state your assumptions and proceed to the best of your abilities.
- If you require more space to answer a question, you may use the blank page(s) at the end of this exam, but you must clearly indicate in the provided answer space that you have done so.