**Author**: Cheng Tian

**Honor pledge**

I pledge on my honor that I have not given or received any unauthorized assistance on this assignment/examination. I further pledge that I have not copied any material from a book, article, the Internet or any other source except where I have expressly cited the source.

**Description**

I think to develop a code that can be easily tested, the most important thing is to write a clear structured code and write as many functions as possible, so that it can be easier to test each function separately.

When testing this code, the biggest difficulty is how do I ensure that my expected output is correct. I need to manually find the expected result by myself. It is difficult and cannot be guaranteed to be correct.