Complete the following tasks. For each question try to come up with various test cases to test your code. You may be evaluated based on the test cases provided during demo.

1. Fibonacci Sequences (25 Points)

Create a class that returns the next value in a Fibonacci sequence every time you call its next() method. The class should only have two static members. The next() method should have an argument that is a bool with a default value of false such that when you give the argument with true it "resets" the function to the beginning of the Fibonacci sequence.

Sample output from fib.cpp
0 1
1 2 3 5 8 13 21 34 55 89 144
1 2 3 5 8 13

2. Namespaces (25 points)

Use the files Functions.h and namespaces.cpp. There is a namespace called MyLib defined in Functions.h. Extend that namespace in a file called MoreFunctions.h so that the code compiles and runs without errors and matches the expected output. Submit your MoreFunctions.h file.

Sample output from namespaces.cpp
f
someFunction

3. Matrix Operators (50 points)

Write a Mat class that has four float members, which are the four elements of a 2x2 matrix. Implement all constructors, methods, and operators so that the file matrices.cpp compiles and works correctly. You may use the provided Vec.h file.

Sample output from matrices.cpp
(3, 14)

Instruction for submission:
1. Create folder for each solution and Zip all your folders together
2. Submit the zip file to catcourses