Assignment 2 Problem 1

Matthew Gardner (106880794)
ComSci 557

1.
   - Line 1 includes C++'s standard library for input and output with the system, *iostream*.
   - Line 2 declares use of the namespace that iostream is defined in. From here on we do not have to specify *std::* before any methods, but the program is now at risk of encountering ambiguity between std and some other namespace when calling a function.
   - Line 4 declares the main function, which is the entry point of the program. Parameters include the count and values of arguments passed in from the command line.
   - Line 6 declares an int, p, and calls the *myFunction* with argument 10 (int). The value returned by *myFunction* is a double which is automatically casted to an int, and assigned as the value of p.
   - Line 7 calls the << operator on *std::cout* twice, once to output the p int, and once to output the newline character.
   - Line 10 declares *myFunction* with input of an int n, and output of a double.
   - Line 12 declares 4 int's *i, j, t, k* and initializes i with 0, j with 1.
   - Line 13 declares a loop that iterates $n + 1$ times by initializing k as 0, and incrementing k while checking whether $k \leq n$ (input value n).
   - Line 15 adds $i + j$ and assigns the value to t.
   - Line 16 assigns the value of j to i.
   - Line 17 assigns the value of t to j.
   - Line 19 returns j after automatically casting it to double.

2. The program does not compile because *myFunction* is not defined before it is called in main. This is fixed by either moving the function to before main, or keeping it after and inserting the declaration *double myFunction(int);* before main.

   Also, there is no reason for *myFunction* to be declared with a double return type. This could be changed to int.

3. This function returns the (n+2)th number of the fibonacci sequence (where 0 is the 0th number). Thus, you could define it as *double fibonacci(int);*.

4. The int value of 144 is stored in p after the function returns. This is the 12th number of the fibonacci sequence