Homework 5

# Question 1

For where

We have the circuit

We have probability 1 to measure the first qubit as . This tells us that is constant, which is expected.

# Question 2

Simon’s circuit might produce

We hope that , and that the system will give use the secret .

In this example, we get . Solving for this system, we get , which is expected.

# Question 3

This tells us that after running the Grover circuit, we have probability to measure . Thus, we found 01 after a single use of .