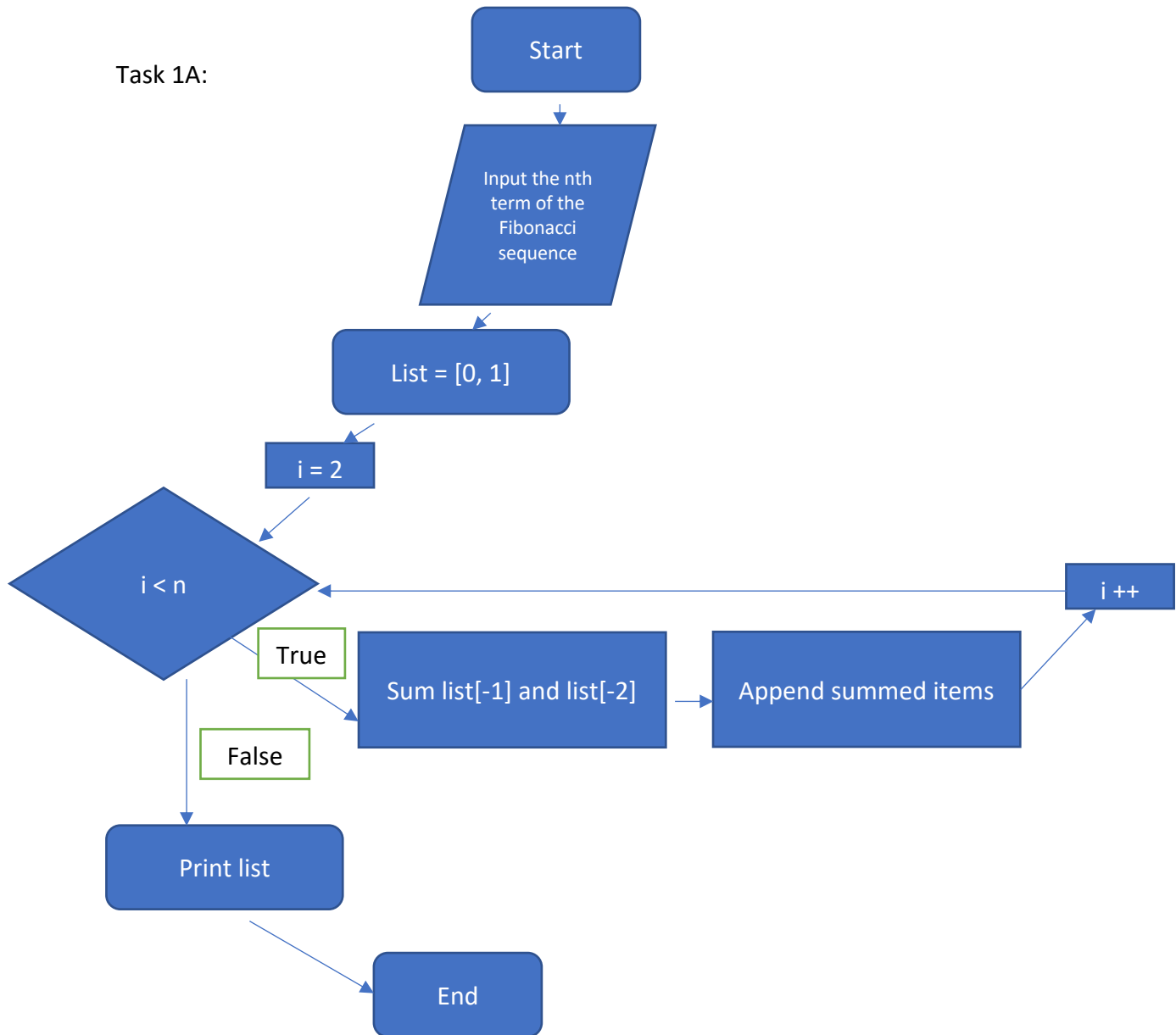
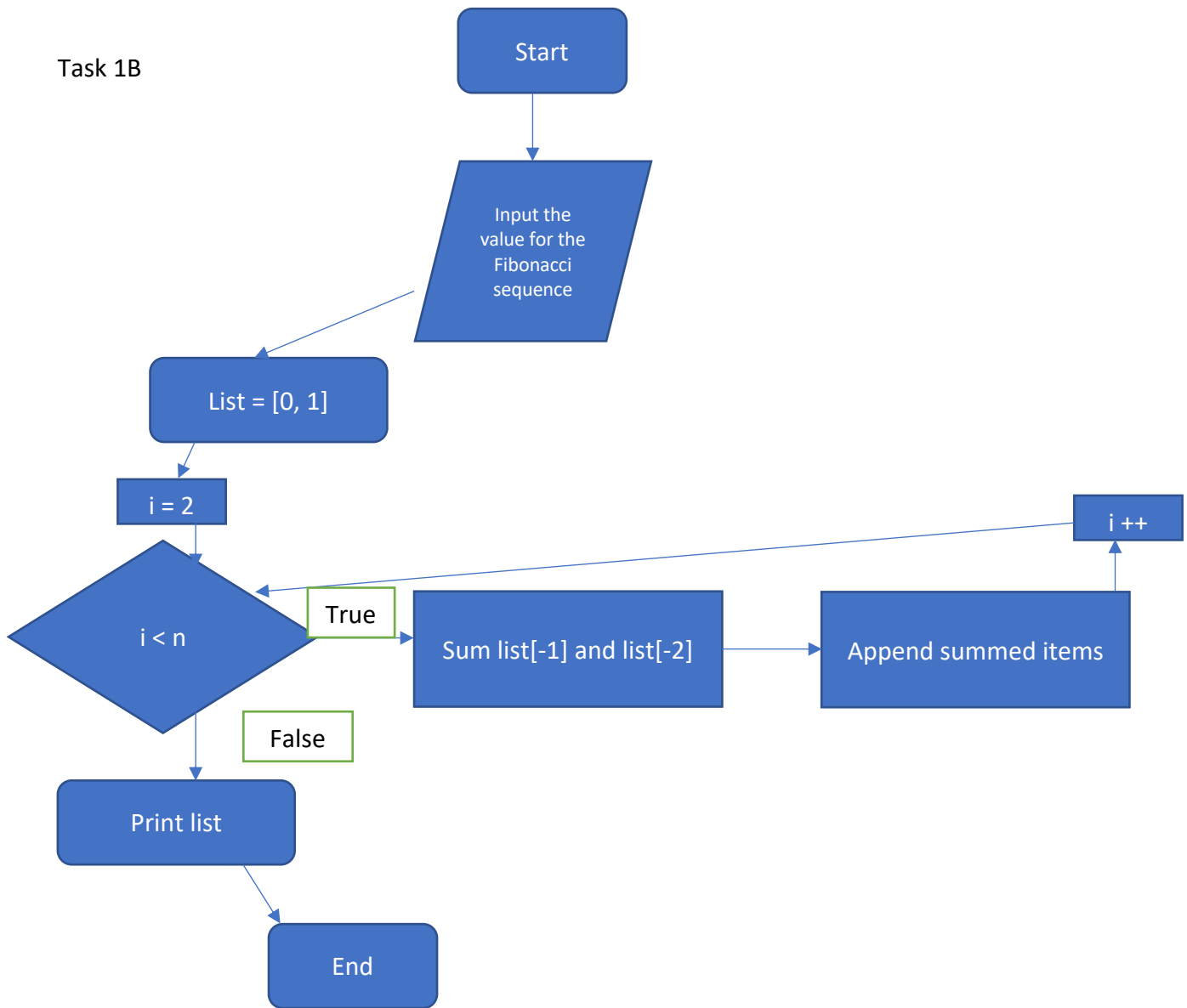


Task 1A:



Task 1B



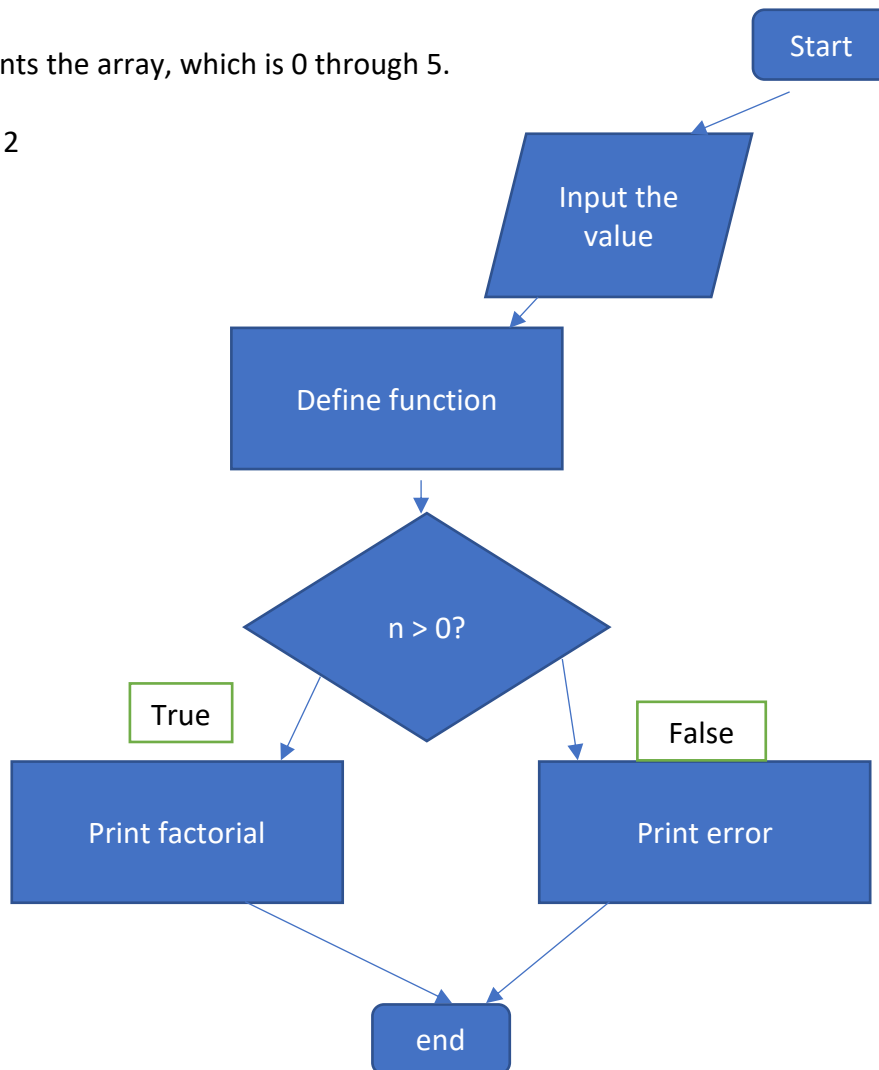
1. When do you use `for` and `while` loops in programming?
 1. For is when we know the range and while is when we don't know the definite amount of times we will loop the code, so we set a value and make the code stop once it hits the value.
2. What is the syntax of `for` and `while` loop in Python?
 1. Syntax for **for** is the "`for x in the range()`" and for while is we set `i < or > n` and when `i` hits the value it stops
3. How do `for` and `while` loops work in Python?
 1. Both can be used when we want to repeat a certain task for an amount of time. "For" loops work better when we know the range and "while" loops work when we have a certain threshold and when the number hits the threshold, it stops.
4. When do `for` loops and `while` loops terminate?

1. "For" loops stop when the end number for the range is reached and "while" loops stop when n is reached.
5. What is the output of the piece of code given below? Identify the number of times the code in the 'for' statements will run.

```
units = []  
for x in range(0, 6):  
    print("Adding", x, "to the list.")  
    units.append(x)  
for x in units:  
    print("List consists of:", x)
```

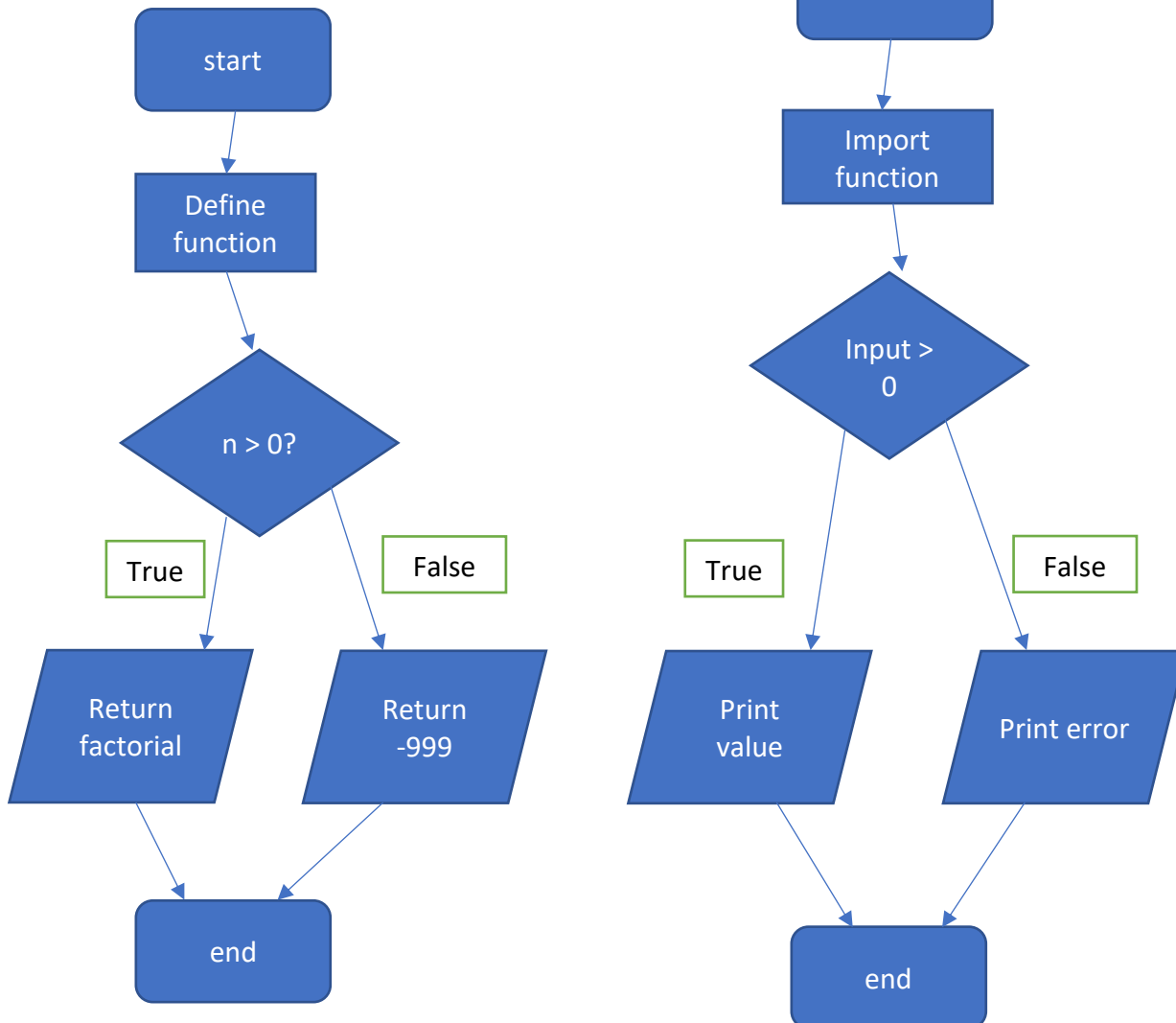
It prints the array, which is 0 through 5.

Task 2

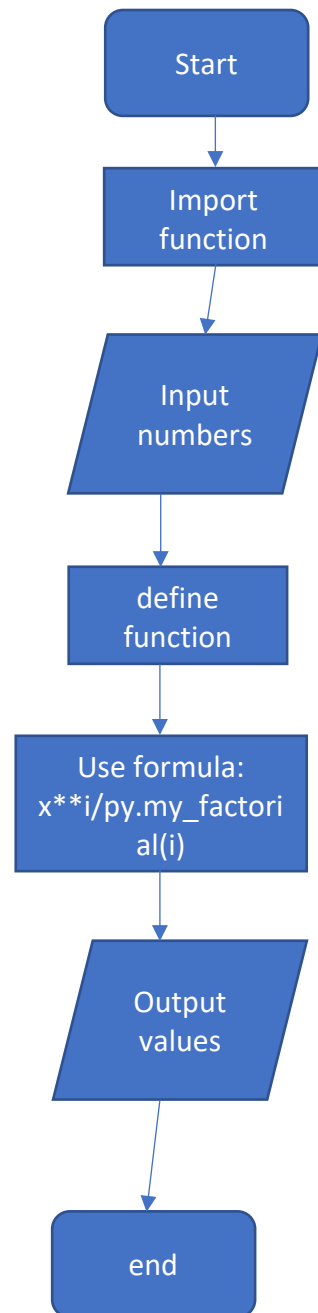


1. Is it more appropriate to use a `for` loop or `while` loop for this task? Justify this answer.
 1. For loop because we know the range.
2. Could you have used the other form of loop to solve this problem? Justify this answer
 1. Yes we can because the for loop we go to `n` and for while loop we would just say that this number is less than `n` and loop it until it gets to `n`.

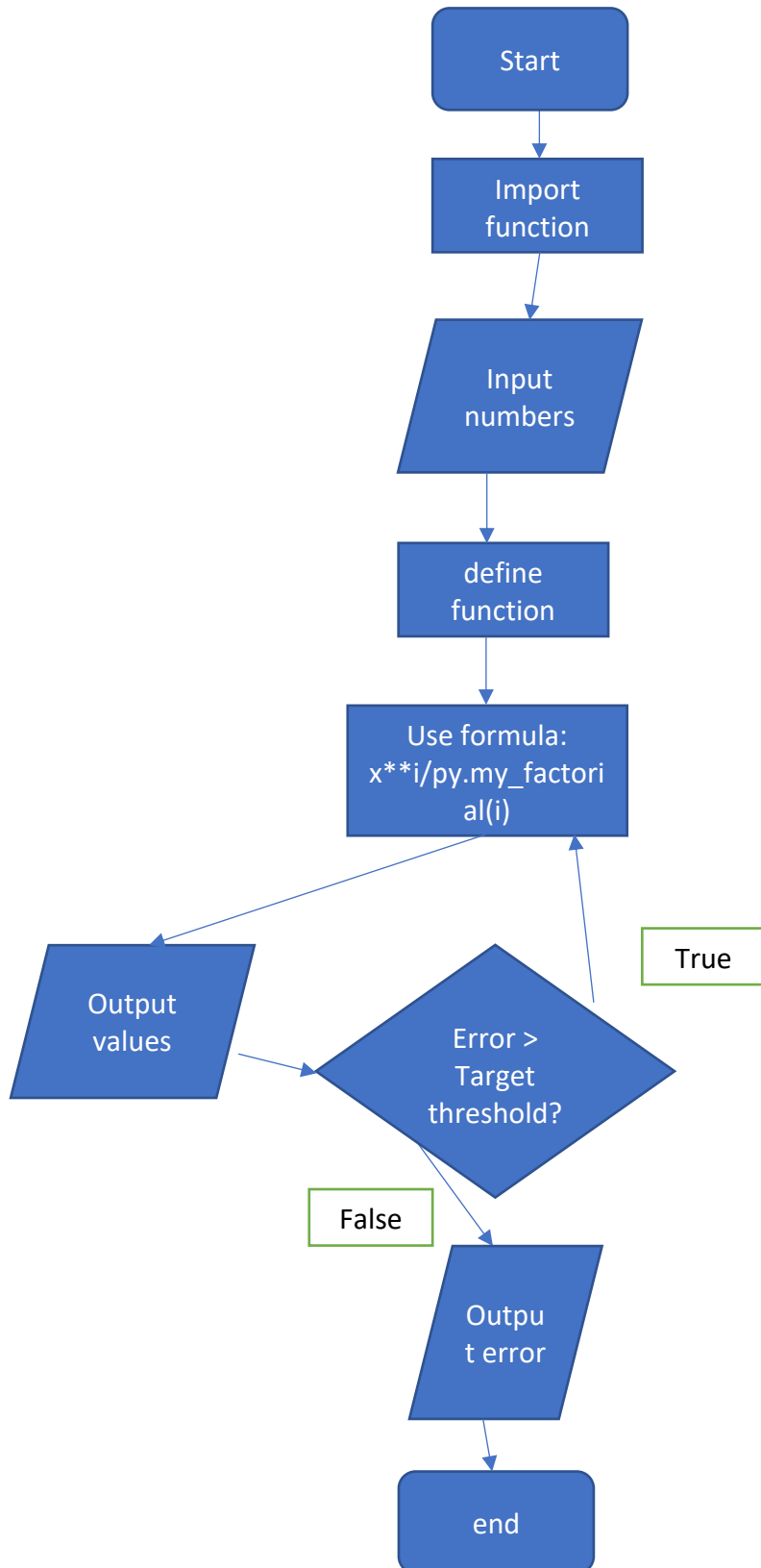
Task 3
Part A:



Task 4
Part A:



Task 4
Part B:



1. How did loops help you in performing this task?
 1. The while loop helped me determine when I should stop adding terms and let me know when error is smaller than the target error threshold. The for loop helped me add together the terms for the function.
2. Could you solve this problem without using loops?
 1. I believe yes but it will take a long time.