1a. Have two numbers input, and find the sum of these two numbers.

1b. Given a space separated list of integers, output the sum of them

1c. Given a space separated list of integers, output the list of those divisible by three.

2. Print the first Fibonacci numbers. eg. 6 🡺 1, 1, 2, 3, 5, 8

3. Given an input, output a string composed of every other character. eg. Aardvark 🡺 Arvr

4a. Check whether an input number is prime or not.

4b. Given an input of two space separated numbers, print all the prime numbers between them.

4c. Given an input of one or two space separated numbers, implement 4a or 4b as appropriate.

5. Calculate the area of a triangle given three side lengths. eg. 13 14 15 🡺 84

6. Remove all punctuation from a string.

eg. "Don't quote me," she said. 🡺 Dontquotemeshesaid

7. Check whether an input string (lower cased, with punctuation removed) is a palindrome.

8. Count the number of each vowel in an input string.

9. Given an input of a sequence of integers, determine whether it is a cyclic arithmetic sequence. ie. could be expressed in the form of , where is the index position, is the length of the cycle, is the common difference, is the first term of the cycle, and is the position of the first occurrence of within the input sequence.

Example 1) 4 7 10 1 4 7 🡪 True (a: 1, d: 3, m: 4, i0: 3)

Example 2) 7 4 1 10 7 4 🡪 True (a: 10, d:-3, m:4, i0: 3)

Example 3) 4 7 11 1 4 7 🡪 False

Example 4) 2 5 2 5 2 5 🡪 True (a: 2, d: 3, m: 2, i0: 0) or (a: 5, d: -3, m: 2, i0: 1)

10a. Ask for a person’s name, and remember it. Each time your script runs, it should show the name of the previous person to run the script. You should use input(…) on this task.

10b. Same script as in 10a, except this time it should remember all prior names.

11. Given two integers as input, print the value of for each integer between the two inputs. eg. 2 5 🡺 0, 2, 6, 12

Write a script that accepts a string as input and …

13a. determines a character with the most number of occurrences.

13b. determine all characters that occur the most.

14a. determines all the words that start and end in a vowel

14b. determines all the words having at least three vowels

15. capitalizes the starting letter of every word of the string

16. finds an adjacent pair of characters with the greatest difference between their ascii values.

17. finds the first non-repeated character within a string

18. removes all duplicate characters from a string. Eg. detection 🡺 detcion

19. determines whether the string contains only digits

20. determines whether the string contains only 0 and 1 characters, and if so assumes it’s a binary string, converts it to a number, and prints out the decimal value.

21. determines whether the string contains only 0-9 and a-f or A-F characters, and if so assumes it’s a hex string, converts it to a number, and prints out the decimal value.

22. prints out the string with each word in the string reversed.

23. treats the first word of the input as a search string to be found in the rest of the string. The script should return the number of occurrences that were found. Overlapping occurrences count:

eg. ana Anaphylactic banana 🡺 2 (found at positions 14 and 16)

24. treats the first word of the input as a search string to be found in the rest of the string, treats the second word as a replacement for the first, and treats the rest of the input as the string to be searched.

eg. b Ba baby boy 🡺 BaaBay Baoy

25. Write a script that accepts two strings as input and determines whether the two strings are anagrams of each other.

26. Given an input filename, if the file exists and is an image, find the dimensions of the image.

Harder questions:

27. finds the longest palindrome within the string.

28. finds all the permutations of a string.

29. finds all the unique permutations of a string.

30. finds a longest increasing subsequence within the string (according to ascii value)

31. finds a longest non-decreasing subsequence within the string (according to ascii value)

Additional algorithm questions:

careercup.com/page?pid=string-manipulation-interview-questions

geeksforgeeks.org/category/data-structures/c-strings

Swift – Learning to Code 1 (Just shy of one quarter):

Idea Sources:

https://www.programiz.com/python-programming/examples

http://www.pythonforbeginners.com/code-snippets-source-code/python-code-examples

http://www.hlevkin.com/Shell\_progr/hellopython.htm

https://learnpythonthehardway.org/book/ex1.html