

Section 1

1. Write a program that asks the user for an integer, adds 5 to it, floor divides by 4, prints the result of the division, then changes the answer to a string and reprints it.
2. Write a Python function to get the difference between a given number and 17. Then, return the absolute value of the difference multiplied by 2.
3. Write a Python program to compute the distance between the points (x1, y1) and (x2, y2). (hint: may have to use **import math**)
4. Write a Python program to convert height (in feet and inches) to centimeters.
5. Write a Python program to calculate the sum of the digits in a four-digit integer.
6. Write a Python program to swap two variables.
7. What is the output of the following code: **print (9//2)**
8. Write a Python program to compute the volume of a sphere with a radius of 6 ($V = (4\pi r^3)/3$).

Section 2

1. Write a Python function to check whether a number is divisible by another number. Accept two integers values from the user.
2. Write a Python program to test whether a number is within 100 of 1000 or 2000.
3. Write a Python program to create a new string from a given string where "Is" (I is a capital i) has been added to the front. If the given string already begins with "Is" then return the string unchanged.
4. Write a Python program to add two objects if both objects are an integer type.
5. Write a Python program that replaces every vowel in a string with 'z'

Section 3

1. Write a Python program to reverse the elements of a list.
2. Write a Python program to find those numbers which are divisible by 7 and multiple of 5, between 1500 and 2700 (both included).
3. Given a range of 10 numbers, iterate through each number and print the sum of the current number and previous number.

4. Write a Python program that prints the even-indexed elements of a given string.
5. Given a list, iterate through it and display the numbers divisible by 5 and only stop if you find a number greater than 150 in the list .
6. Given a number, count the total number of digits in a number.
7. Write a program to display all prime numbers within a range.
8. Write a Python program to find the list of words that are longer than n from a given list of words.
9. Write a Python program to print the numbers of a specified list after removing even numbers from it.
10. Write a Python script to check whether a given key already exists in a dictionary.
11. Write a Python script to merge two Python dictionaries.
12. Write a Python program to find the second smallest number in a list.
13. Write a Python program which accepts a sequence of comma-separated numbers from the user and generates a list and a tuple with those numbers.
14. Write a Python program to check whether lowercase letters exist in a string.
15. Write a Python function that takes a positive integer and returns the sum of the cube of all the positive integers smaller than the specified number.
16. Write a Python program to test if a variable is a list or tuple or a set.
17. Write a Python program to reverse the digits of a given number and add it to the original, If the sum is not a palindrome repeat this procedure.
18. What is the output of the following program?
T = (2e-04, True, False, 8, 1.001, True)
val = 0
for x in T:
 val += int(x)
print(val)
19. Write a Python program to count the number 4 in a given list.

Section 4 (Potentially Optional)

1. Create an 5x2 integer array from a range between 100-200 such that the difference between each element is 10
2. Print the second column of a given NumPy array
3. Delete the second column from a given array and insert a new column in its place.
4. Write a NumPy program to test element-wise for NaN of a given array.
5. Write a NumPy program to create a 5x5 zero matrix with elements on the main diagonal equal to 1, 2, 3, 4, 5.
6. Write a NumPy program to compute the sum of all elements, sum of each column and sum of each row of a given array.
7. Write a NumPy program to create a one dimensional array of forty pseudo-randomly generated values. Select random numbers from a uniform distribution between 0 and 1.