1. **Write a Python program to check a triangle is equilateral, isosceles or scalene.**
   HINT:
   a. Think of what inputs will you need from the user
   b. How will you determine what type the triangle is?

2. **Ask the user for 2 inputs.**
   a. **What day of the wee**k: User enters one of the following:
      i. Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday
   b. **Vacation** – User enters one of the following:
      i. Yes, No
   c. If the user is on a vacation and it is a weekday, then you should let the user know to "Have a lazy day"
   d. If it is a weekday and the user is not on a vacation, then you should let the user know "Get going my friend"
   e. If the user is not on a vacation, but it is a weekend, then tell the user "Have a lazy day"
   f. If the user is on a vacation and it is a weekend, then tell the user "Have a lazy day"
3. Ask the user to input a number. Calculate and print the square root of the number.
4. Ask the user to input the money that you have. Ask for an input for the money that your friend has.
   a. If both of you have equal money, then print "equal". If your friend has more money than you, then print "your friend is rich". If you have more money than your friend, then print "WooHoo! I am rich"
5. Question:
   a. Ask the user to input the Total hours worked
   b. Ask the user to input the hourly wages.
   c. If the total hours are up to 40 hours, then the total wage should be hourly wage*total hours.
   d. If total hours are more than 40 hours, then wage should be calculation in c for all hours up to 40 hours.
   e. For the hours over 40 hours, the hourly wage should be 1.5 times the regular hourly wage.
6. What is the data type from "input". How would you get an input of "float" from the user? Show using an example.

7. Create a list that has 8 elements with the following combination. Name your list as my_list
   a. 5 words, 3 numbers, 2 lists. 2^{nd} and 6^{th} element should be a list.
   b. How would you get the length of the list?
   c. How would you get the length the 6^{th} element?

d. Create a new list which is a copy of 2nd element of the list. Name it: new_list
e. How would you replicate and print all the elements of new_list 2 times.

8. Ask the user to enter a word with more than 4 letters. Print the first 3 letters of the name.

9. Write a program to create a list that has only the first, third and fifth element from the list: ['Red', 'Green', 'White', 'Black', 'Pink', 'Yellow']

10. Ask the user to enter a text / sentence. Sentence should be more than 10 words.
    a. Convert the sentence entered by user into a a list. Name the list: new_list
    b. Create a variable new_sentence
    c. Join the new_list into new_sentence giving the combinator as "**"

11. Write a python program that takes the length of a side as an input from the user. Ask the user what type of a shape is it.

    If the shape is triangle, then calculate the perimeter of the triangle (assume equilateral triangle).

    If the shape is a square, calculate the perimeter of the square

    If the shape is a circle, calculate the perimeter of the circle

12. Write a Python program to print get an input from the user. If the number is a multiple of 9 and it is an even number, then print "Multiple of 9 and even". If not, print "Try next time"

13. Ask the user to input a sentence. Print each alphabet of the sentence on a new line.

14. Create a list with 10 numbers. Write code to print the total of the numbers in the list, average of the numbers in the list.

15. Create a list of names of 5 students. Ask the user to input a name. If the name that user entered is in the list, then print "Student is enrolled". If the name that user entered is not in the list, then print "Not enrolled"

16. Ask the user to enter a word. Write a program to print the word in reverse order.

17. List temp= [20,25,37,45,54,52,8]. These are all temperatures given in Celsius. Write a program that prints each temperature in Celsius and in Fahrenheit. Your Fahrenheit calculation should not be hardcoded. Use code to convert Celsius to Fahrenheit.

18. Assume you have a list of numbers `12, 10, 32, 3, 66, 17, 42, 99, 20.`

    a. Write a for loop that prints each of the numbers on a new line.
    b. Write a for loop that prints each number and its square on a new line.

19. Write a function **myfunc** that takes input as 3 numbers. The function returns the largest of the three numbers. Ask the user for an input of 3 numbers. Convert these numbers into a list. Use a variable named result to call the **myfunc. Print result.**

20. Write a function **mysum** that takes a list as an input. The function returns the sum of all the numbers in the list. Ask the user to enter a list of of numbers. Convert the input into a list. Use a variable called final_sum to call **mysum. Print final_sum**

21. Write a function **func_sort** that takes a list as an input and returns the smallest number in the list. Ask the user to enter a list of of numbers. Convert the input into a list. Use a variable called final_sort to call **func_sort. Print final_sort**

22. Write a function func_even that takes a list as an input and returns the sum of even numbers. Ask the user to enter a list of of numbers. Convert the input into a list. Use a variable called even_sum to call **func_even. Print even_sum**

23. Create a list that has 8 elements with the following combination. Name your list as my_list
    a. 5 words, 3 numbers. 5th word should be a word.
    b. How would you get the length of the list?
    c. How would you get the length the 5th element?
    d. Create a new list which is a copy of my_list. Name it: new_list
    e. How would you replicate and print all the elements of new_list 2 times.

24. Write a program that takes a list of numbers a = [5, 10, 15, 20, 25]and makes a new list of only the first and last elements of the given list. Create so that you can use it for any number of items in the list.

25. a **=** [1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89]
    a. Write a program that prints out all the elements of the list that are less than 5.
    b. Make a new list that has all the elements less than 5 from this list in it and print out this new list.
    c. Ask the user for a number and return a list that contains only elements from the original list a that are smaller than that number given by the user.

26. my_string is*:* "Twinkle, twinkle, little star, How I wonder what you are! Up above the world so high, Like a diamond in the sky. Twinkle, twinkle, little star, How I wonder what you are"
    a. Convert it to a list.
    b. Create a variable my_new_poem
    c. Join the list into my_new_poem giving the combinator as “;;”

27. Write a python program that takes radius as an input from the user. It then prints the area and perimeter of the circle.

28. Write a Python program to print get an input from the user. Print if the number is over 12 and if it is an even number

29. Ask the user to enter a number
    a. If the number is divisible by 3, it should return “Fizz”.
    b. If it is divisible by 5, it should return “Buzz”.
    c. If it is divisible by both 3 and 5, it should return “FizzBuzz”.
    d. Otherwise, it should return the same number

30. Ask the user to enter numbers separated by commas. Send these as a list to a function.
    Function name: take_home_calculator.
    Logic of the function: For each number in the list, the function should calculate and print the Take-home salary. Take-home salary is the salary left in-hand after deducting the tax amount. Tax amount according to the rule:
    a) Salary < 40,000: No tax
    b) Salary between 40,000 and 70,000: Tax: 20%
    c) Salary between 70,001 and 99,999: Tax: 30%
    d) Salary greater than 100,000: Tax: 40%

31. Create a function find_factor which takes a number as an input parameter.
    Logic of the function: The function finds and prints the factors of that number.
    You are allowed to use only for loops and if conditions in the function. You are NOT allowed to use any python built-in libraries or functions.
    E.g. If the number is 12, then the function should print:
        1 is a factor of 12
        2 is a factor of 12
        3 is a factor of 12
        4 is a factor of 12
        6 is a factor of 12

32. Create a function called raise_power. The function should take 2 inputs:
        Number
        What power does it need to be raised to

    Logic of the function: Function should return the value of number raised to the power.
    Example: if the 2 inputs are 4, 3 -> then the function should return: 64
        If the 2 inputs are 9,3 -> then function should return: 729
    You are NOT allowed to use any Math /Statistics functions or libraries in Python. You can only use Lists, For loops, If conditions and addition, subtraction or multiplication..
        You cannot use 4**3

33. Write a function that takes a word as an input, and returns the number of vowels in the sentence.

34. Create a function that takes a string as an input. The function should print the length of the string without using the python function len.

35. Ask the user to enter a list of numbers separated by a comma. Ask the user which number to search for. Create a function called list_find.
    Logic of the function: The function should take the list of numbers, and the number to search as input parameters. Function should print the index of the element at which the number is.

    Example: if your list is [10,20,30,50,40,90]
    Number to search: 50

    The function should print: 50 is at position 4 in the list.

36. Ask the user to enter a number. Send this number as an input parameter to a function. Call this function: Times_table.
    Logic of the function: For any number as an input, the function should print the times table. Example, If the user input the number 2: then the output should be:
    2 x 1 = 2
    2 x 2 = 4
    2 x 3 = 6
    2 x 4 = 8
    2 x 5 = 10
    2 x 6 = 12
    2 x 7 = 14
    2 x 8 = 16
    2 x 9 = 18
    2 x 10 = 20

37. Create a function that calculates the Total cost of a Project. The function should take 3 inputs:
    Number of people in the Project
    Total number of Months
    Hourly pay (assume the same hourly pay for all persons in the project)

    Logic of the function: Calculate the total cost of the project. Assume 8 hours as the standard working day – 5 days a week and 4 weeks in month.

38. Ask the user to enter a list of numbers separated by comma. Send the list as an input parameter to a function called calc_func.

Logic of the function calc_func: The function should calculate the Arithmetic mean of the numbers. You are NOT allowed to use any in-built Python functions. You can only use for loops, and if conditions.

Not allowed to use: len, mean, sum

Example: if the list is [2,3,5,6]
Then Arithmetic mean is calculated as: (2+3+5+6) / 2

39. Write a function that takes a word as an input, and returns the number of consonants in the sentence. Consonants are all alphabets which are not vowels.

40. Create a function that takes a list of numbers as an input parameter. The function should print total number of numbers without using the python function len.