1. Write a program that calculates and prints the value according to the given formula:

   Q = Square root of [(2 * C * D)/H]

   C is 50. H is 30.D is the variable whose values should be input to your program in a comma-separated sequence.

2. Write a program that computes the value of a+aa+aaa+aaaa with a given digit as the value of a.

3. Define a function which can generate a list where the values are square of numbers between 1 and 10 (both included). Then the function needs to print the last 5 elements in the list.

4. Use a list comprehension to print each odd number in a list. The list is input by a sequence of comma-separated numbers.

5. Define a function which can generate a dictionary where the keys are numbers between 1 and 10 (both included) and the values are square of keys. The function should just print the values only.

6. Write a program that accepts a sequence of whitespace separated words as input and prints the words after removing all duplicate words and sorting them alphanumerically.

7. Write a program which takes a console input and computes the factorial of the input numbers.The results should be printed in a comma-separated sequence on a single line.

8. Define a class named Circle which can be constructed by a radius. The Circle class has a method which can compute the area.

9. Define a class named Shape and its subclass Square. The Square class has an init function which takes a length as argument. Both classes have an area function which can print the area of the shape where Shape's area is 0 by default.

10. Please write a binary search function which searches an item in a sorted list. The function should return the index of element to be searched in the list.

11. Write a program to solve a classic ancient Chinese puzzle:
We count 35 heads and 94 legs among the chickens and rabbits in a farm. How many rabbits and how many chickens do we have?