Challenge 1
Write a program to solve a classic puzzle: There are 35 heads and 94 legs among the chickens and rabbits in a farm. How many rabbits and how many chickens do we have? Hint: Use `for` loop to iterate all possible solutions.

Challenge 2
Write a program to track the growing amount of investment over time. An initial deposit, called the principal amount is made. Each year, the amount increased by a fixed percentage, called the annual rate of the return. For example, a principal amount of $100 with an annual rate of return of 5% increases the first year by $5. The second year, the increase is 5% of the new amount $105, which is $5.25, and the new amount becomes $110.25. The program prompts the user to enter an initial amount, an annual rate (percentage) of return, and a number of years. It then prints out the amount of investment, rounded to 2 decimal places at the end of each year for the specified number of years. A sample output from the program is shown below:

```
Initial investment: $100, annual rate: 5%, years of investment: 4
Year 1: $105.00
Year 2: $110.25
Year 3: $115.76
Year 4: $121.55
```

Challenge 3
Write a program to print the list after removing numbers which are divisible by 5 or 7 from the numbers ranging from 1 to 100.

Challenge 4
Write the code to ask the user for three names and three ages. After the names and ages are entered, ask the user for one of the names, and print the correct age. If the user enters a name which is not in the dictionary, the word “unknown” should be printed.
Extra: Build a GUI program for this challenge.

Challenge 5
Find the unique words and their frequency of occurrence in the following string and store them in a dictionary.

```
'''Peter Piper picked a peck of pickled peppers.
A peck of pickled peppers Peter Piper picked.
If Peter Piper picked a peck of pickled peppers,
where is the peck of pickled peppers Peter Piper picked?'''
```

Challenge 6
In this exercise, the task is to read a set of temperature data (the monthly high temperatures in degree Celsius at Heathrow Airport for 1948 through 2016) from a file and then find some basic information: the highest and lowest temperatures, the mean (average) temperature, and the median temperature (the temperature in the middle if all the temperatures are sorted).

The temperature data is in the file “data/Heathrow.txt”. You should find the highest and lowest temperature, the average, and the median. Hints: Use the built-in min(), max(), sum() functions.

Challenge 7

In the “data” folder, there is a CSV file called “scores.csv” containing data about game players and their scores. Write a program that reads the data from this CSV file and creates a new file called high_scores.csv in which each row contains the player’s name and their highest score. The output CSV file should look like this:

```
name,high_score
LLCoolDave,27
red,12
tom123,26
...
```

Challenge 8

Write a program called temperature.py that defines two functions:

1. `convert_cel_to_far()`, which takes one float parameter representing degrees Celsius and returns a float representing the same temperature in degrees Fahrenheit using the following formula:

    F = C * 9/5 + 32

2. `convert_far_to_cel()`, which takes one float parameter representing degrees Fahrenheit and returns a float representing the same temperature in degrees Celsius using the following formula:

    C = (F - 32) * 5/9

The program should do the following:

i. Prompt the user to enter a temperature in degrees Fahrenheit and then display the temperature converted to Celsius.
ii. Prompt the user to enter a temperature in degrees Celsius and then display the temperature converted to Fahrenheit.
iii. Display all converted temperatures rounded to two decimal places.

Challenge 9

Write a program which uses map() and filter() to make a list whose elements are square of even number in the range of number from 1 to 100 (inclusive).

Extra: Perform the same task using list comprehension.

Challenge 10

Define a class named Circle which can be constructed by a radius. The Circle class has two methods which can compute the area and circumference. Create a Circle object with the radius of 4 using this class and compute its area and circumference.