Question 1

1.This code is saved in q1.py

2.This program allows the user to input a number n.

This number should be positive.

The output would be the square root of n.

3.Execute as followings:

```
Please enter a number:5
Here is the square root: 2.236067977499978
PS C:\Users\lonla\OneDrive - CUHK-Shenzhen\桌面\
program>
```

Question 2

1.This code is saved in q2.py

2.This output would be the first 100 emirps.

3.Execute as followings:

```
    13    17    31    37    71    73    79    97   107   113
   149   157   167   179   199   311   337   347   359   389
   701   709   733   739   743   751   761   769   907   937
   941   953   967   971   983   991  1009  1021  1031  1033
  1061  1069  1091  1097  1103  1109  1151  1153  1181  1193
  1201  1213  1217  1223  1229  1231  1237  1249  1259  1279
  1283  1301  1321  1381  1399  1409  1429  1439  1453  1471
  1487  1499  1511  1523  1559  1583  1597  1601  1619  1657
  1669  1723  1733  1741  1753  1789  1811  1831  1847  1867
  1879  1901  1913  1933  1949  1979  3011  3019  3023  3049
PS C:\Users\lonla\OneDrive - CUHK-Shenzhen\桌面\program>
```

Question 3

1.This code is saved in q3.py

2.This program allows the user to input a credit card number.

The number should be integer.

This program would output whether the number is valid or invalid.

3.Execute as followings:

```
Please enter your credit card numbers:4388576018402626
It is invalid.
PS C:\Users\lonla\OneDrive - CUHK-Shenzhen\桌面\program>
```

Question 4

1.This code is saved in q4.py

2.This program allows the user to input two words.

This program would output whether these words are anagrams.

3.Execute as followings:

```
Please enter the first word:listen
Please enter the second word:silent
is an anagram
PS C:\Users\lonla\OneDrive - CUHK-Shenzhen\桌面\program>
```

Question 5

1.This code is saved in q5.py

2.This program would output after all the students have passed through the building

and changed the lockers, which lockers are open.

3.Execute as followings:

```
1 4 9 16 25 36 49 64 81 100
PS C:\Users\lonla\OneDrive - CUHK-Shenzhen\桌面\program>
```

Question 6

1.This code is saved in q6.py

2. This program would output a possible solutionof theEight Queens puzzle.

3.Execute as followings:

```
| |Q| | | | | | |
| | | |Q| | | | |
| | | | | |Q| | |
| | | | | | | |Q|
| | |Q| | | | | |
|Q| | | | | | | |
| | | | | | |Q| |
| | | | |Q| | | |
```