

```

3 6.0 7
4 9.0 4
5 2.3 2
6 1.0 0
7 :
8 9.0 8
9 3.4 7
10 6.0 5
11 5.0 3
12 100.0 0
13 Output :
14  $A(x)=3.5x^8+6.0x^7+9.0x^4+2.3x^2+1.0$ 
15  $B(x)=9.0x^8+3.4x^7+6.0x^5+5.0x^3+100.0$ 
16  $C(x)=12.5x^8+9.4x^7+6.0x^5+9.0x^4+5.0x^3+2.3x^2+101.0$ 
17  $D(x)=-5.5x^8+2.6x^7-6.0x^5+9.0x^4-5.0x^3+2.3x^2-99.0$ 
18  $E(x)=31.5x^{16}+65.9x^{15}+20.4x^{14}+21.0x^{13}+117.0x^{12}+48.1x^{11}+50.7x^{10}+61.8x^9+359.0x^8+662.2x^7+17.5x^5+900.0x^4+5.0x^3+230.0x^2+100.0$ 
20

```

15. Recursive

Please implement a program which can add up the digits of a number to a sum less than 10. Each input contains a single positive integer n . Add each digit of n and repeat the process until the sum is < 10 . For example, $n= 567$. First, add up the digits of n (i.e., $5+6+7 = 18$). Because the sum is larger than 10, you need to keep adding up the digits of 18. Finally, the output is 9 (i.e., $1+8 = 9$).

Test Case

Please test your program with Input, and then check the answers with Output.

Listing 15 : Recursive

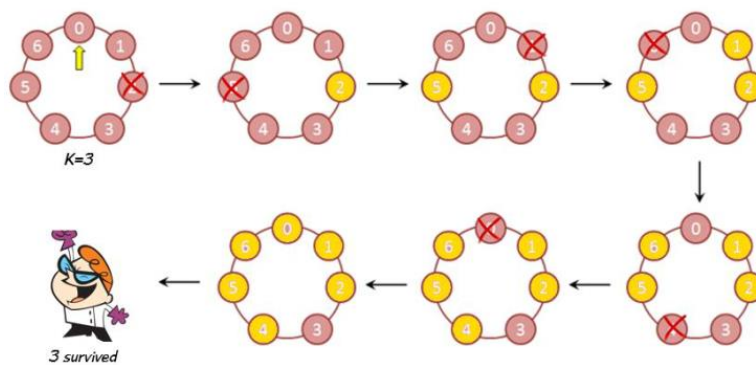
```

1 Input :
2 31
3 69
4 1234567892
5
6 Output :
7 4
8 6

```

16. Circular linked list

Please implement a program which creates a **circular linked list** and displays the elements in the list. Next, use it to solve the Josephus problem. The illustration of the processing about Josephus problem is the following figure. Assume there are eight people. Each number represents a person. k is used as a specified number of people to be skipped. Therefore, in the first round, #2 is killed. The procedure is repeated with the remaining people, starting with the next person who is not dead, going in the **same direction** and skipping the same number of people, until only one person remains, and is survived. The default direction is **clockwise**. The input file contains a list of names separated by commas. The second line is the k value. Please output the sequence of the people who are killed during the process.



An Illustration of the Josephus Problem.

Note: You must use linked lists; otherwise, no points will be given.

Test Case

Please test your program with Input, and then check the answers with Output.

Listing 16: Circular linked list

```

1 Input :
2 Jay,Tom,Wayne,Kevin,Helen,Jim,Kile,Ruby,Nick,Patty,Mike,Kurt
3 2
4
5 Output :
6 Tom is killed.
7 Kevin is killed.
8 Jim is killed.
```