題目a

- 假設現在有一種簡易的文字編碼規則如下：將訊息每個字母往後推n位再傳出去，例如：假設n為2， A→C、B→D，而後面的 Y→A、Z→B，
- **Input：**

  輸入要加密的文字(由大/小寫英文字母及空白組成，長度<100字元)

  下一行輸入n(n 為整數)
- **Output：**

  輸出加密後的文字

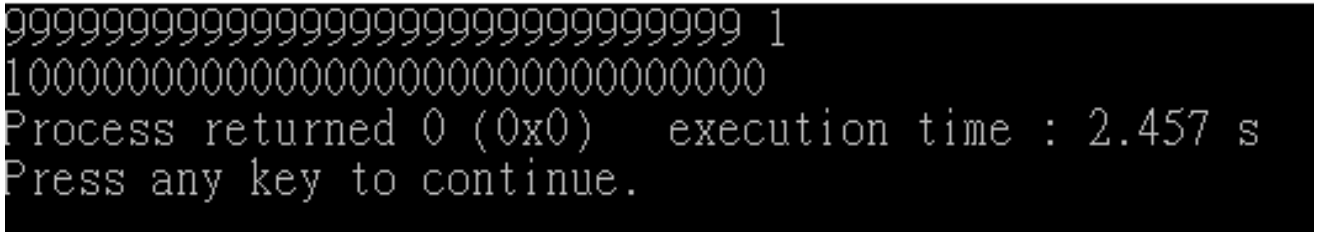
```
ABC EFG
2
CDE GHI
Process returned 0 (0x0)   execution time : 9.314 s
Press any key to continue.
```

題目b

- 大數運算
- 輸入兩個超長的正整數 A、B ($0<A、B<10^{99}$)
- 請輸出 A+B 的值
- Input :

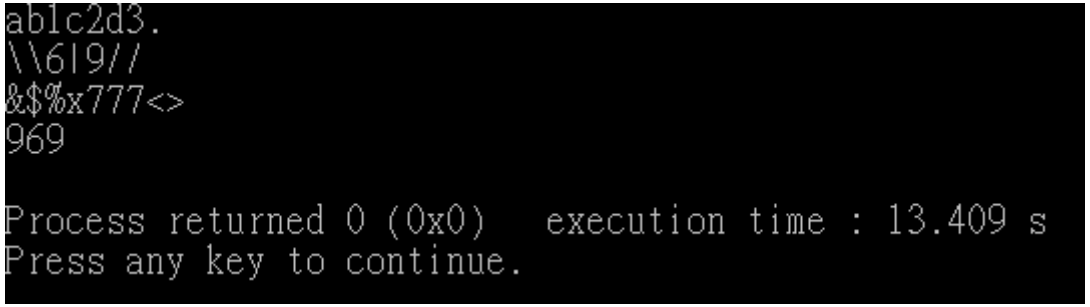
  A B
- Output :

  A+B



題目c

- 將所有非數字的字元去除，只留下數字的部分，於是三行文字可以得到三個數字，最後再把這三個數字相加並輸出。
- Input ：
  - 有三行，每行有100個以內的字元(不包含空格)，每行至少有一個字元是數字而且每行的數字不會超過8個。
- Output：
  - 請將每行非數字的字元去除之後，可以得到一個數字，再將這三個數字加起來，並輸出其結果。



題目d

Hmm! Here you are asked to do a simple sorting. You will be given N numbers and a positive integer M. You will have to sort the N numbers in ascending order of their modulo M value. If there is a tie between an odd number and an even number (that is their modulo M value is the same) then the odd number will precede the even number. If there is a tie between two odd numbers (that is their modulo M value is the same) then the larger odd number will precede the smaller odd number and if there is a tie between two even numbers (that is their modulo M value is the same) then the smaller even number will precede the larger even number.

For remainder value of negative numbers follow the rule of C programming language: A negative number can never have modulus greater than zero. E.g. `-100 MOD 3 = -1, -100 MOD 4 = 0`, etc.

Input

The input file contains 20 sets of inputs. Each set starts with two integers N $(0 < N \leq 10000)$ and M $(0 < M \leq 10000)$ which denotes how many numbers are within this set. Each of the next N lines contains one number each. These numbers should all fit in 32-bit signed integer. Input is terminated by a line containing two zeroes.

Output

For each set of input produce $N + 1$ lines of outputs. The first line of each set contains the value of N and M. The next N lines contain N numbers, sorted according to the rules mentioned above. Print the last two zeroes of the input file in the output file also.

Sample Input

```
15 3
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
0 0
```

Sample Output

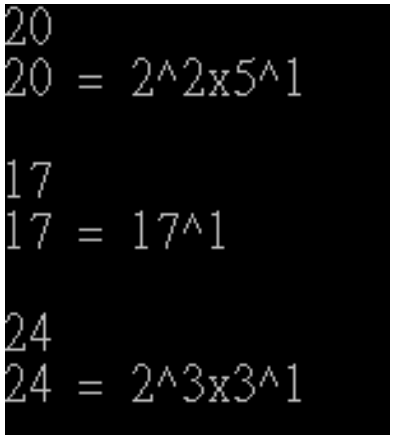
```
15 3
15
9
3
6
12
13
7
1
4
10
11
5
2
8
14
0 0
```

題目e

- Given an unsigned integer $n \geq 2$, factor it into primes
- Input為EOF時結束程式
- Input : n
- Output :

For example, $20 = 2^2 \cdot 5$

Prime factorization of 20 = 2^2x5^1



題目f

- Given an unsigned integer $n \geq 2$, factor it into primes and use the factorization to determine the number and sum of divisors of n.
- Input為EOF時結束程式
- Input : n
- Output :

For example, $20 = 2^2 \cdot 5$ has 6 divisors, namely, $1, 2, 4, 5, 10$ and 20, that sum up to 42, agreeing with formula (1): $(1+2)(1+1) = 6$ and formula (2): $(2^0 + 2^1 + 2^2)(5^0 + 5^1) = 42$.

Prime factorization of 20 = 2^2x5^1

Number of divisors = 6

Sum of divisors = 42

```
20
20 = 2^2x5^1
Number of divisors = 6
Sum of divisors = 42

17
17 = 17^1
Number of divisors = 2
Sum of divisors = 18
```