URI Online Judge | 1252

# Sort! Sort!! And Sort!!!

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**Timelimit: 2**

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 many sets of inputs. Each set starts with two integers **N** (0 < **N** ≤ 10000) and **M** (0 < **M** ≤ 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

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 | Sample Output |
|---|---|
| 15 3<br>1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>3 3<br>9<br>12<br>10<br>0 0 | 15 3<br>15<br>9<br>3<br>6<br>12<br>13<br>7<br>1<br>4<br>10<br>11<br>5<br>2<br>8<br>14<br>3 3<br>9<br>12<br>10<br>0 0 |

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