E. Thief in a Shop

time limit per test: 5 seconds
memory limit per test: 512 megabytes

A thief made his way to a shop.

As usual he has his lucky knapsack with him. The knapsack can contain k objects. There are n kinds of products in the shop and an infinite number of products of each kind. The cost of one product of kind i is a_i.

The thief is greedy, so he will take exactly k products (it's possible for some kinds to take several products of that kind).

Find all the possible total costs of products the thief can nick into his knapsack.

Input

The first line contains two integers n and k ($1 \le n, k \le 1000$) — the number of kinds of products and the number of products the thief will take.

The second line contains n integers a_i ($1 \le a_i \le 1000$) — the costs of products for kinds from 1 to n.

Output

Print the only line with all the possible total costs of stolen products, separated by a space. The numbers should be printed in the ascending order.

Examples

input Copy

```
3 2
1 2 3
```

output Copy

```
2 3 4 5 6
```

input Copy

```
5 5
1 1 1 1 1
```

output Copy

```
5
```

input Copy

```
3 3
3 5 11
```

output Copy

```
9 11 13 15 17 19 21 25 27 33
```

Educational Codeforces Round 9
Finished
Practice

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
324277765	Jun/13/2025 19:23	Accepted
324277689	Jun/13/2025 19:22	Compilation error
324277525	Jun/13/2025 19:21	Accepted
323817091	Jun/10/2025 21:37	Accepted
323790950	Jun/10/2025 18:07	Accepted
323787686	Jun/10/2025 17:42	Accepted
323787600	Jun/10/2025 17:42	Wrong answer on test 5
323787352	Jun/10/2025 17:40	Wrong answer on test 5
323709691	Jun/10/2025 07:24	Accepted
323709238	Jun/10/2025 07:18	Wrong answer on test 5

→ Problem tags

divide and conquer dp fft math *2400

No tag edit access

→ Contest materials

- Tutorial