Programming Questions

Exactly two factors

Let there are numbers from 1 to n. You have to print all the numbers which have exactly two factors.

INPUT

No. of test cases: 1<=t<=100

Next t lines will contain single integer: 1<=n<=10000

OUTPUT

All the numbers which satisfy the above condition.

SAMPLE INPUT

2

2

5

SAMPLE OUTPUT

2

2 3 5

The pascal's problem

You task is to print Pascal's Triangle for a given n.
The pattern for n=2 is
1
1 1

The pattern for n=6
1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
1 5 10 10 5 1
INPUT
The first and the only line of the input contains the value of n.
OUTPUT
The output contains the required pattern (See sample test).
CONSTRAINTS
1<= n <=100

SAMPLE INPUT

6

SAMPLE OUTPUT

1

1 1

1 2 1

1 3 3 1

1 4 6 4 1

1 5 10 10 5 1

Mafia

Many bad people live in a village who hate each other, with N (2 <= N <= 100,000) houses. The houses are located along a straight line at positions x1,...,xN (0 <= xi <= 1,000,000,000).
To prevent the C (2 <= C <= N) villager from hurting each other, assign the villagers to the houses, such that the minimum distance between any two of them is as large as possible. What is the largest minimum distance?
Input
t – the number of test cases, then t test cases follows.
* Line 1: Two space-separated integers: N and C
* Lines 2..N+1: Line i+1 contains an integer house location, xi
Output
For each test case output one integer: the largest minimum distance(new test case output in new line)

SAMPLE INPUT

1

6 3

1

2

8

3

4

9

SAMPLE OUTPUT

3

The GCD and LCM problem

The problem is simple. You have to find the LCM and the GCD of 2 numbers. You have to do this for a number of test cases.

INPUT

The first line of input contains t, the number of test cases. The t lines follow, each contains two space separated integers A and B.

OUTPUT

The output contains t lines. Each line contains 2 space separated integers, that is, the GCD and the LCM for the input integers for that particular test case.

CONSTRAINTS

$1 <= t <= 100000$

$1 <= A, B <= 10^9$

SAMPLE INPUT

3

2 3

4 5

4 6

SAMPLE OUTPUT

1 6

1 20

2 12