Problem I. Multiplication

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	512 mebibytes

This is an interactive problem.

Jury has chosen a secret odd number x between 1 and $2^{31} - 1$ inclusive. Your task is to guess it. In order to do that, jury gives you an even number n. Then you should output **exactly** n distinct integers between 0 and $2^{31} - 1$ inclusive. After that, jury will multiply each of these numbers by x and take the results modulo 2^{31}. Then jury will equiprobably choose some random subset of these new numbers of size $n/2$ and give this subset back to you in random order. After that, you should output the correct value of x.

In each test, x is chosen in advance and does not change.

Interaction Protocol

Initially, you are given one even integer n ($4 \le n \le 10^5$). After that, you should output n distinct integers $a_1, a_2, \ldots, a_n$ ($0 \le a_i \le 2^{31} - 1$) on a single line, separated by spaces. Next, you are given $n/2$ integers $b_1, b_2, \ldots, b_{n/2}$ ($0 \le b_i \le 2^{31} - 1$) created by the process described above, on a single line, separated by spaces. Finally, you should output a single odd integer x: the secret number chosen by the jury ($1 \le x \le 2^{31} - 1$).

To prevent output buffering, flush the output buffer after each printed line: this can be done by using, for example, `fflush (stdout)` in C or C++, `System.out.flush ()` in Java, `flush (output)` in Pascal, or `sys.stdout.flush ()` in Python. Also, do not forget to terminate each line of output with a newline character.

Example

standard input	standard output
4 9 6	 1 2 3 4 3