

Coding Arena



A B C D E

Problem : Isotope

Scientist recently found a new element X, which can have different isotopes upto an atomic value of 199. Speciality of element X is that when two atoms fuse they produce energy multiple of their atomic value and forms an atom with atomic value of their multiple modulus 199.

For Eg:

If atom1 with value 56 and atom2 with value 61 fuse.

They produce energy of 3416 KJ ($56 * 61$)

Resulting atom will have atomic value $(56 * 61) \bmod 199 = 33$

Scientists created a nuclear reactor to create energy by this method. Everyday they get several atoms of X from supplier in a particular sequence. Since this element highly radioactive they cant risk by changing its sequence. So each atom can fuse only with another atom nearby. Nevertheless scientists can choose order of fusion thereby maximizing total energy produced.

Now, for given sequence of atomic values, output maximum energy that can be produced.

For Eg:

If sequence of atoms are

56,61, 2

Then they can produce 3416KJ by fusing 56&61 which results in an atom of value 33. Then they can fuse 33 and 2 to get energy of 66KJ. So total energy generated is 3482.

But if they cleverly choose to fuse atoms 61 & 2 first then they generate 122 KJ with a resulting atom of value 122. Then if they fuse 122 and 56, they can generate 6832 KJ. So total energy is 6954.

Hence Maximum energy that can be generated from this sequence is 6954.

Input Format

Input starts with a number specifying number of inputs(n) followed by n space separated integers specifying atomic values of n atoms.

Line 1	N , where N is the number of atoms in the sequence to be fused.
Line 2	$a_1 a_2 a_3 \dots a_n$ where $a_i \rightarrow$ Atomic value of i th atom. and two atoms are space delimited

Constraints:

$0 < a_i < 199$

$1 < n < 1000$

Output Format

Print Determinant of the input matrix rounded up to 3 digits after decimal point, on console in the format shown in table below

Line 1	For Valid Input, print E , where E is Integer stating maximum energy that can be produced For Invalid Input, print INVALID INPUT
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Sample Inputs and Outputs

Time Left

05 56 23
hr min sec

Rules & Regulations

Sr.no	Input	Output(Rounded upto Three Decimal digits)
1	3 15 75 60	8925
2	J	INVALID INPUT
3	3 15 0 6	INVALID INPUT
4	3 5 5 199	INVALID INPUT
5	4 15 75 60 45	18515

Note:

Please do not use package and namespace in your code. For object oriented languages your code should be written in one class.

Note:

Participants submitting solutions in C language should not use functions from <conio.h> / <process.h> as these files do not exist in gcc

Note:

For C and C++, return type of main() function should be int.

Submit Answer

☐ I BASANT BHALA confirm that the answer submitted is my own.

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