Isotope Fusion

Problem Statement:

Scientists recently found a new element X, which can have different isotopes up to 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 E.g.:

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) mod 199 = 33

Scientists created a nuclear reactor to create energy by this method. Every day they get several atoms of X from supplier in a particular sequence. Since this element highly radioactive they can't 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.

Example

If sequence of atoms is

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	$a_1\ a_2\ a_3\ ....\ a_n$ where ai -> Atomic value of i th atom. and two atoms are space delimited

Limits:

0 < ai < 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** E, where E is Integer stating maximum energy that can be produced **For Invalid Input** INVALID INPUT

Sample Inputs and Outputs

Sr.no	**Input**	**Output** (Rounded up to Three Decimal digits)
1	3 15 75 60	14880
2	J	INVALID INPUT
3	3 15 0 6	INVALID INPUT
4	3 5 5 199	INVALID INPUT
5	4 15 75 60 45	18900