Coding Arena

<C*deVita/>
the TCS Coding Contest

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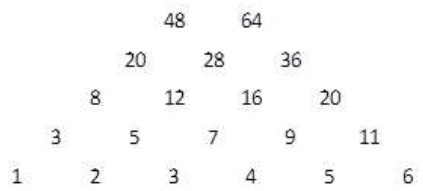
Problem : Pascal Pyramid

Pascal's triangle giving binomial coefficients is well known. In this triangle, elements in each row can be obtained by adding two adjacent elements in the previous row. The pyramid of numbers we construct in this problem is similar to the Pascal triangle. We start with six numbers at the base of the pyramid, and construct the pyramid one layer at a time by adding the two adjacent numbers in the previous layer. For Example, starting with the numbers 1 2 3 4 5 6 in the base, we get the following pyramid.

The apex of the pyramid is filled with the product of the numbers in the row below instead of the sum.



In the above pyramid, the apex is filled with the number 48 x 64 =3072. The aim is to get the largest number possible at the apex of the pyramid.

The input will be a set of N positive integers. Six need to be chosen from these and arranged at the base to get the largest possible number at the top.

Input Format:

The first line of the input is N, the total number of integers that will be given.

The second line is a set of N (not necessarily distinct) comma separated positive integers from which the six numbers at the base need to be selected.

Output Format:

The output is one line with an integer representing the maximum value of the apex of the pyramid when six integers are selected and arranged suitably at the base.

Constraints:

N < 13
Integers provided for selection ≤ 100

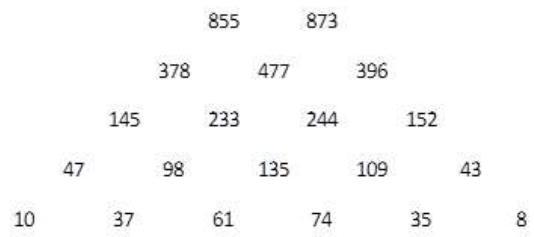
Example 1

Input
8
10,4,74,61,8,37,2,35

Output
746415

Explanation
There are 8 numbers given, from which the 6 numbers in the base are to be selected and arranged so as to maximize the apex number. One way of doing this is in the figure below.

The product of the two numbers below the apex is 746415, which is the output.

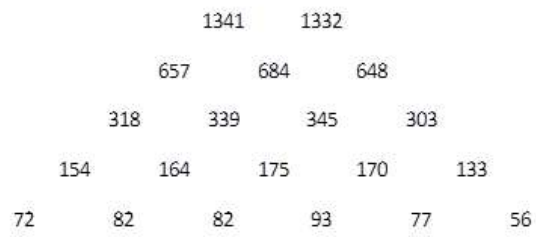


Example 2

Input
10
37,93,56,10,77,82,72,82,39,7

Output
1786212

Explanation
There are 10 numbers (N=10). One arrangement that will give a high product at the apex is



The product of the numbers at the top is 1786212, which is the output.

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 , **PRAVEENKUMAR PVSM** confirm that the answer submitted is my own.
I would like to provide attribution to the following sources.

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