
Playing with numbers

P44029_en

Examen extraordinari d'Algorísmia, FME (2011-07-01)

Given n numbers, compute all the different results that can be obtained with the sum and product operators and adding parentheses at will. You cannot change the order of the given numbers. For instance, with 2, 1 and 3 we can get 5, 6, 8 or 9, but no other result. Some possible combinations are $(2 \cdot 1) + 3 = 5$, $2 \cdot (1 \cdot 3) = 6$, $2 \cdot (1 + 3) = 8$, i $(2 + 1) \cdot 3 = 9$.

Input

Input consists of several cases, each with n , followed by n natural numbers between 1 and 9. Assume $1 \leq n \leq 9$.

Output

For every case, print all the possible results in order.

Sample input

```
3 2 1 3
2 1 1
4 2 5 8 3
4 9 9 9 9
```

Sample output

```
5 6 8 9
1 2
18 21 29 31 32 34 41 45 54 57 58 59 77 78 83 86 110 122 126 168 240
36 99 162 171 243 324 738 810 1458 6561
```

Problem information

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