

2230 - Operations with Vectors

Description

Our friend octavito has been learning how to work with vectors in his Lineal Algebra matter. His teacher show them a way a little wear for working with vectors, it is about the vector combinations. For example, you have two vectors **A** {1,2,-12}, **B** {1,2,3} both with the same dimension, he want to combine them obtaining the less possible sum of the vectors **A** and **B** by the following math $a_1*b_1 + a_2*b_2 + a_3*b_4 + \dots + a_n*b_n$ where **n** is the vector dimension. You have to find the less possible sum between **A** and **B** combining them among themselves. For example **A** {1,2,-12} + **B** {1,2,3} = $1*1 + 2*2 + (-12*3) = (1+4-36) = -31$ but if we change vector **B** permuting his values **B** = {3,2,1} and repeat the operation **A+B** = $(1*3) + (2*2) + (-12*1) = (3+4-12) = 5$. The less way is **A** {1,2,-12} + **B** {2,1,3} = $(1*2+1*2+3*-12) = (2+2-36) = -32$.

Input specification

The input contains one number $1 \leq n \leq 8$ which is the vectors dimension, on the second line the values of the vector **A** separated by spaces, the following line contains the values of the vector **B** separated by spaces.

Output specification

Only one value representing the minimum sum obtainable by combining vectors **A** and **B**.

Sample input

```
3
1 2 -12
1 2 3
```

Sample output

```
-32
```

Hint(s)

Source

José Nolberto Isac González

Added by

Igvallejo

Addition date

2013-02-19

Caribbean Online Judge

Time limit (ms)	5000
Test limit (ms)	1000
Memory limit (kb)	130000
Output limit (mb)	64
Size limit (bytes)	15000
Enabled languages	Bash C C# C++ Java Pascal Perl PHP Python Ruby Text