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# E - Fruit Lineup

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Time Limit: 2 sec / Memory Limit: 1024 MB

Score : 475 points

## Problem Statement

You have  $A$  apples,  $B$  oranges,  $C$  bananas, and  $D$  grapes.

How many ways are there to arrange these  $A + B + C + D$  fruits in a single row from left to right so that all of the following conditions hold? Find the count modulo 998244353.

- Every apple is placed to the left of every banana.
- Every apple is placed to the left of every grape.
- Every orange is placed to the left of every grape.

Here, the apples are indistinguishable; the same goes for the oranges, the bananas, and the grapes.

## Constraints

- $1 \leq A \leq 10^6$
- $1 \leq B \leq 10^6$
- $1 \leq C \leq 10^6$
- $1 \leq D \leq 10^6$
- $A, B, C$ , and  $D$  are integers.

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## Input

The input is given from Standard Input in the following format:

```
A B C D
```

## Output

Output the number, modulo 998244353, of valid arrangements.

### Sample Input 1

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```
1 1 1 1
```

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### Sample Output 1

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```
5
```

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There are five valid arrangements:

- apple, orange, banana, grape
- apple, orange, grape, banana
- apple, banana, orange, grape
- orange, apple, banana, grape
- orange, apple, grape, banana

### Sample Input 2

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```
1 2 4 8
```

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### Sample Output 2

[Copy](#)

```
2211
```

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### Sample Input 3

[Copy](#)

```
834150 21994 467364 994225
```

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## Sample Output 3

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947921688

[Copy](#)

### Language

Python (CPython 3.11.4) ▼

### Source Code



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\* at most 512 KiB

\* Your source code will be saved as *Main.extension*.

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