

Contest Duration: 2025-05-10(Sat) 22:00 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250510T2100&p1=248>) - 2025-05-10(Sat) 23:40 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250510T2240&p1=248>) (local time) (100 minutes)

[Back to Home \(/home\)](/home)

[🏠 Top \(/contests/abc405\)](/contests/abc405)

[📋 Tasks \(/contests/abc405/tasks\)](/contests/abc405/tasks)

[❓ Clarifications \(/contests/abc405/clarifications\)](/contests/abc405/clarifications)

[📊 Results ▼](#)

[🏆 Standings \(/contests/abc405/standings\)](/contests/abc405/standings)

[🏆 Virtual Standings \(/contests/abc405/standings/virtual\)](/contests/abc405/standings/virtual)

[📖 Editorial \(/contests/abc405/editorial\)](/contests/abc405/editorial)

[💬 Discuss \(https://codeforces.com/blog/entry/142744\)](https://codeforces.com/blog/entry/142744)



## E - Fruit Lineup

[Editorial \(/contests/abc405/tasks/abc405\\_e/editorial\)](/contests/abc405/tasks/abc405_e/editorial)



Time Limit: 2 sec / Memory Limit: 1024 MiB

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.

## 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

[Copy](#)

```
1 1 1 1
```

[Copy](#)

### Sample Output 1

[Copy](#)

```
5
```

[Copy](#)

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

[Copy](#)

```
1 2 4 8
```

[Copy](#)

### Sample Output 2

[Copy](#)

```
2211
```

[Copy](#)

### Sample Input 3

[Copy](#)

```
834150 21994 467364 994225
```

[Copy](#)

## Sample Output 3

Copy

947921688

Copy

/#telegram)

url=https%3A%2F%2Fatcoder.jp%2Fcontests%2Fabc405%2Ftasks%2Fabc405\_e%3Flang%3Den&title=E%20-

---

[Rule \(/contests/abc405/rules\)](/contests/abc405/rules) [Glossary \(/contests/abc405/glossary\)](/contests/abc405/glossary)

[Terms of service \(/tos\)](/tos) [Privacy Policy \(/privacy\)](/privacy) [Information Protection Policy \(/personal\)](/personal) [Company \(/company\)](/company)

[FAQ \(/faq\)](/faq) [Contact \(/contact\)](/contact)

Copyright Since 2012 ©AtCoder Inc. (<http://atcoder.co.jp>) All rights reserved.