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Statement
Submissions

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Spoilers
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solved by 20 / 24
math: combinatorics
math: number theory

Top users by time

#	User	Time
1	inionel	16 ms
2	nandonathaniel	17 ms
3	albertnugroho128	22 ms
4	Raphela	24 ms
5	irdacin	28 ms

Top users by memory

#	User	Memory
1	bagasangga	776 KB
2	nandonathaniel	836 KB
3	inionel	4616 KB
4	albertnugroho128	4616 KB
5	vjudge3	4932 KB

Submission #3515887

Arkavidia 9.0 - Penyisihan CP / J. Jurnal Koprima

Accepted • inionel • C++20 • April 20, 2025 at 16:15:57

▸ Sample Test Data Results

▸ Test Data Results

```cpp
#include <bits/stdc++.h>
using namespace std;
#define pb push_back
#define ppb pop_back
#define fi first
#define se second
typedef long long ll;
typedef unsigned long long ull;
typedef pair<ll, int> pii;
const char nl = '\n';
const int N = 2e5+2, MAX = 1e6+1, mod = 1e9+7;
int spf[MAX];

void sieve(){
    iota(spf, spf+MAX, 0);
    for (int i = 2; i < MAX; i++){
        if (spf[i] == i){
            for (ll j = (ll)i*i; j < MAX; j += i){
                if (spf[j] == j) spf[j] = i;
            }
        }
    }
}

ll bpow(ll a, ll b){
    if (b == 0) return 1;
    ll t = bpow(a, b/2);
    if (b % 2) return t*t%mod*a%mod;
    return t*t%mod;
}

ll inv(ll p){
    return bpow(p, mod-2);
}

void solve(){
    int n; cin >> n;
    sieve();
    int a[n+1];
    ll ans = 1;
    map<int, vector<int>> occ;
    for (int i = 1; i <= n; i++){
        cin >> a[i];
        ans = ans*(bpow(a[i], i*(n-i+1))) % mod;
        int x = a[i];
        while (x > 1){
            int v = spf[x];
            occ[v].pb(i);
            while (x % v == 0) x /= v;
        }
    }
    for (auto [p, v] : occ){
        int pre = 0;
        ll sum = 0, tot = (ll)n*(n+1)/2;
        for (int i : v){
            int gap = (i-1)-pre;
            sum += gap*(gap+1)/2;
            pre = i;
        }
        int i = n-pre;
        sum += i*(i+1)/2;
        tot -= sum;
        ans = ans*(bpow(((p-1)*inv(p))%mod, tot)) % mod;
    }
    cout << ans << nl;
}

int main(){
    ios_base::sync_with_stdio(0);
    cin.tie(0); cout.tie(0);

    int t = 1; //cin >> t;
    while (t--){
        solve();
    }
}
```