



Problem Menu

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Arkavidia 9.0 - Penyisihan CP > M

Your score

not attempted

Spoilers

 Show difficulty Show tags

solved by 29 / 36

dynamic programming:
combinatorics

math: number theory

Top users by time

| # | User | Time |
|---|----------------------------|-------|
| 1 | Retr0Foxx | 21 ms |
| 2 | bagasangga | 23 ms |
| 3 | frennn | 34 ms |
| 4 | mhasan01 | 42 ms |
| 5 | YukiSaki | 43 ms |

Top users by memory

| # | User | Memory |
|---|---------------------------|---------|
| 1 | Retr0Foxx | 1096 KB |
| 2 | hitsuuj | 1452 KB |
| 3 | Raphela | 1656 KB |
| 4 | YukiSaki | 2124 KB |
| 5 | ftri | 2316 KB |

Submission #4521271

Arkavidia 9.0 - Penyisihan CP / M. Main GCD

Accepted • Retr0Foxx • C • October 21, 2025 at 20:38:11

[Sample Test Data Results](#)[Test Data Results](#)

```
1 #include <stdio.h>
2
3 #define MOD (int)(998244353)
4 #define MAXN 200005
5
6 int sieve[MAXN];
7 int freq[MAXN];
8
9 #define ll long long
10 // #define printf
11
12 ll powmod(ll x, ll p)
13 {
14     ll res = 1;
15     ll a = x;
16     while (p)
17     {
18         if (p & 1) res = (res * a) % (ll)MOD;
19         a = (a*a) % (ll)MOD;
20         p /= 2;
21     }
22     return res;
23 }
24
25 void setat(int i)
26 {
27     sieve[i/32] |= (1 << (i % 32));
28 }
29
30 int getat(int i)
31 {
32     return !(sieve[i/32] & (1 << (i % 32)));
33 }
34
35 // gpt im sorry
36 int fastReadInt()
37 {
38     int x = 0, c = getchar();
39     int neg = 0;
40     while (c < '0' || c > '9') {
41         if (c == '-') neg = 1;
42         c = getchar();
43     }
44     for (; c >= '0' && c <= '9'; c = getchar())
45         x = (x << 1) + (c - '0');
46     return neg ? -x : x;
47 }
48
49 signed main()
50 {
51     /*
52     std::ios_base::sync_with_stdio(false);
53     std::cin.tie(nullptr);
54     std::cout.tie(nullptr);*/
55
56     int n = fastReadInt();
57
58     for (int i = 1; i <= n; ++i)
59     {
60         int current = fastReadInt();
61         freq[current]++;
62     }
63     int res = 1;
64     for (int i = 2; i*i <= 200000; ++i)
65     {
66         if (getat(i)) continue;
67         for (int j = i*i; j <= 200000; j += i)
68             setat(j);
69     }
70     for (int i = 2; i <= 200000; ++i)
71     {
72         if (getat(i)) continue;
73         ll total = 0;
74         //printf("%i\n", i);
75         for (ll j = i; j <= 200000; j*=i)
76         {
77             int current = 0;
78             for (int k = j; k <= 200000; k += j)
79             {
80                 // base = j, hmm = k[i]
81                 current += freq[k];
82             }
83             total += (ll)current*(ll)(current-1)/2;
84         }
85         res = (((ll)res) * powmod(i, total)) % (ll)MOD;
86     }
87     //std::cout << res << "\n";
88     //printf("%i\n", res);
89     int yes = 0;
90     for (int p10 = 1000000000; p10 >= 1; p10/=10)
91     {
92         if (res >= p10 || yes) {yes = 1; putchar('0' + (res/p10));}
93         res -= p10 * (res/p10);
94     }
95     putchar(0xa);
96     return 0;
97 }
```

