

```

1  #include <iostream>
2  #define ll long long
3  using namespace std;
4
5  #define sz 100000
6  ll col[sz/64+10];
7  int prime[sz], cnt;
8
9  void seive()//1 indexed
10 {
11     long long i,j,k;
12     for(i=3;i<sz;i+=2)
13         if(!(col[i/64]&(1LL<<(i%64))))
14             for(j=i*i;j<sz;j+=2*i)
15                 col[j/64]|=(1LL<<(j%64));
16
17     prime[cnt++]=2;
18     for (int i = 3; i<sz; i+=2)
19         if(!(col[i/64]&(1LL<<(i%64))))
20             prime[cnt++] = i;
21 }
22
23 bool is_prime(ll i)
24 {
25     if(i==2) return true;
26     if(i%2==0) return false;
27     if(!(col[i/64]&(1LL<<(i%64)))) return true;
28     return false;
29 }

```