

```

#include<bits/stdc++.h>
using namespace std;
const int N=1e7+5;
int p[N]; // 质数表
int phi[N]; // 欧拉函数
int mu[N]; //  $\mu$ 
int d[N]; //  $d$ 
int mi[N]; //  $m_i$ 
int sigma[N]; //  $\sigma$ 
int mp[N]; //  $m_p$ 
bool b[N]; //  $b$ 

int main(){
    // freopen("num.txt", "w", stdout);
    b[0]=b[1]=phi[1]=mu[1]=d[1]=mi[1]=sigma[1]=mp[1]=1;
    for(int i=2;i<=N-5;i++){
        if(!b[i]){
            p[++p[0]]=i; phi[i]=i-1; mu[i]=-1; d[i]=2;
            mi[i]=1; sigma[i]=1+i; mp[i]=1+i;
        }
        for(int j=1;j<=p[0]&&i*p[j]<=N-5;j++){
            b[i*p[j]]=1;
            if(i%p[j]==0){
                phi[i*p[j]]=phi[i]*p[j];
                mu[i*p[j]]=0;
                d[i*p[j]]=d[i]/(mi[i]+1)*(mi[i]+2);
                mi[i*p[j]]=mi[i]+1;
                sigma[i*p[j]]=sigma[i]/mp[i]*(mp[i]*p[j]+1);
                mp[i*p[j]]=mp[i]*p[j]+1;
                break;
            }
            else{
                phi[i*p[j]]=phi[i]*phi[p[j]];
                mu[i*p[j]]=-mu[i];
                d[i*p[j]]=d[i]*d[p[j]];
                mi[i*p[j]]=1;
                sigma[i*p[j]]=sigma[i]*sigma[p[j]];
                mp[i*p[j]]=p[j]+1;
            }
        }
    }
    /*
    int n;
    scanf("%d",&n);
    for(int i=2;i<=n;i++){
        printf("%d %d %d %d %d %d\n",i,b[i]?0:1,phi[i],mu[i],d[i],sigma[i]);
    }
    */
    return 0;
}

```

}

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