中国剩余定理(CRT)

```cpp
#include <bits/stdc++.h>
using namespace std;
#define rep(i,a,b) for(int i=a;i<=b;i++)
#define per(i,a,b) for(int i=a;i>=b;i--)
typedef long long ll;
const int maxn=100005;

ll a[maxn],m[maxn],M[maxn],t[maxn];
ll exgcd(ll a,ll b,ll &x,ll &y){
    if(b==0){
        x=1,y=0;
        return a;
    }
    ll d=exgcd(b,a%b,y,x);
    y-=a/b*x;
    return d;
}
int main(){
    int n;
    ll MM=1,y,ans=0;
    cin >> n;
    rep(i,1,n){
        cin >> m[i] >> a[i];
        MM*=m[i];
    }
    rep(i,1,n){
        M[i]=MM/m[i];
        exgcd(M[i],m[i],t[i],y);
        t[i]=(t[i]%m[i]+m[i])%m[i];
        rep(j,1,a[i]){
            ans=(ans+M[i]*t[i])%MM;
        }
    }
    cout << ans;
    return 0;
}
```