# Lucas

1515

#include<iostream>

#define P 1000000007

#define ll long long

using namespace std;

ll n,m;

ll qpow(ll a,ll b){

ll ans=1;

for(ll i=b;i;i>>=1,a=(a\*a)%P)

if(i&1)ans=ans\*a%P;

return ans;

}

ll C(ll a,ll b){

if(b>a)return 0;

if(b>a-b)b=a-b;

ll s1=1,s2=1;

for(ll i=1;i<=b;i++)

{

s1=s1\*(a-i+1)%P;

s2=s2\*i%P;

}

return s1\*qpow(s2,P-2)%P;

}

ll lucas(ll a,ll b){

return C(a/P,b/P)\*C(a%P,b%P);

}

int main()

{

n=read();m=read();

printf("%lld",(lucas(n,m)+max(n,m))%P);

return 0;

}

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#include <iostream>

using namespace std;

typedef long long ll;

ll p[15],an[15];

ll fac[100005],inv[100005];

ll pow\_mod(ll a, int n, int mod)

{

ll ret = 1;

while (n)

{

if (n&1) ret = ret \* a % mod;

a = a \* a % mod;

n >>= 1;

}

return ret;

}

void ini(int x)

{

fac[0] = 1;

for(int i = 1; i < x; i++) fac[i] = fac[i-1]\*i%x;

inv[x - 1] = pow\_mod(fac[x-1],x-2,x);

for(int i = x - 2; i >= 0; i--) inv[i] = inv[i+1] \* (i+1) % x;

}

ll c(ll a,ll b,ll p)

{

if(a < b || a < 0 || b < 0)

return 0;

return fac[a]\*inv[b]%p\*inv[a-b]%p;

}

ll lucas(ll a,ll b, int p)

{

if( b == 0)

return 1;

return lucas(a/p,b/p,p)\*c(a%p,b%p,p)%p;

}

ll ex\_gcd(ll a, ll b, ll& x, ll& y)

{

if (b == 0)

{

x = 1;

y = 0;

return a;

}

ll d = ex\_gcd(b, a % b, y, x);

y -= x \* (a / b);

return d;

}

ll mul(ll a, ll b, ll mod){

a = (a % mod + mod) % mod;

b = (b % mod + mod) % mod;

ll ret = 0;

while(b) {

if(b&1) {

ret += a;

if(ret >= mod) ret -= mod;

}

b >>= 1;

a <<= 1;

if(a >= mod) a -= mod;

}

return ret;

}

ll china(ll n,ll\* a,ll\* b){

ll M = 1,d,y,x= 0;

for(int i = 0; i < n; i++){

M \*= b[i];

}

for(int i = 0; i < n; i++)

{

ll w = M/b[i];

ex\_gcd(b[i],w,d,y);

x = (x + mul(mul(y, w, M), a[i], M));//可能超范围

}

return (x+M) % M;

}

int main(){

int T,k;

ll n,m;

scanf("%d",&T);

while(T--){

scanf("%I64d%I64d",&n,&m);

scanf("%d",&k);

for(int i = 0; i < k; i++){

scanf("%I64d",&p[i]);

ini(p[i]);

an[i] = lucas(n,m,p[i]);

}

printf("%I64d\n",china(k,an,p));

}

return 0;

}