**BIT MANIPULATION:**

[A - Check bit](https://vjudge.net/problem/HackerRank-si-basic-check-bit) <https://vjudge.net/problem/HackerRank-si-basic-check-bit>

**Source Code:**

#include <iostream>

using namespace std;

int main()

{

int N,i,k;

cin>>N>>i;

k=N&(1<<i);

if(k!=0)

cout<<"true";

else

cout<<"false";

return 0;

}

[B - Check Power of Two](https://vjudge.net/problem/HackerRank-si-check-power-of-two) <https://vjudge.net/problem/HackerRank-si-check-power-of-two>

**Source code:**

#include <iostream>

using namespace std;

int main()

{

long int T;

cin>>T;

while(T--){

long int N;

cin>>N;

int c=N&(N-1);

if(c==0)

cout<<"True"<<endl;

else

cout<<"False"<<endl;

}

return 0;

}

C - Finding Missing Number <https://vjudge.net/problem/HackerRank-si-finding-missing-number>

**Source code :**

#include <iostream>

using namespace std;

int main(){

int T;

cin>>T;

while(T--){

int N,i;

cin>>N;

int s=0,ar;

for(i=1;i<=N;i++){

cin>>ar;

s=s^ar^i;

}

cout<<(s^(N+1))<<endl;

}

return 0;

}

[D - Flip Bits](https://vjudge.net/problem/HackerRank-si-flip-bits) <https://vjudge.net/problem/HackerRank-si-flip-bits>

**Source code:**

#include <iostream>

using namespace std;

int main()

{

long int T;

cin>>T;

while(T--){

long int A,B;

cin>>A>>B;

int c=A^B,count=0;

while(c!=0){

int x=c&1;

if(x!=0)

count++;

c=c>>1;

}

cout<<count<<endl;;

}

return 0;

}

[E - Reverse Bits](https://vjudge.net/problem/HackerRank-si-reverse-bits) <https://vjudge.net/problem/HackerRank-si-reverse-bits>

**Source code:**

#include<iostream>

using namespace std;

int main()

{

int T;

cin>>T;

while(T--){

int N;

cin>>N;

unsigned r;

for(int i=0;i<32;i++){

r=(r<<1)|(N&1);

N=N>>1;

}

cout<<r<<endl;

}

}

[F - Swap Bits](https://vjudge.net/problem/HackerRank-si-swap-bits) <https://vjudge.net/problem/HackerRank-si-swap-bits>

**Source code:**

#include <iostream>

using namespace std;

int main()

{

int T;

cin>>T;

while(T--){

long N;

cin>>N;

long mask\_odd=0xAAAAAAAAAAAAAAAAL;

long mask\_even=0x5555555555555555L;

unsigned long A=(N&mask\_odd)>>1;

unsigned long B=(N&mask\_even)<<1;

cout<<(A|B)<<endl;

}

}

[G - Compute a power b](https://vjudge.net/problem/HackerRank-si-compute-a-power-b) <https://vjudge.net/problem/HackerRank-si-compute-a-power-b>

**Source code:**

#include <iostream>

using namespace std;

int main()

{

int T;

cin>>T;

while(T--){

long int a,b;

cin>>a>>b;

long long r=1;

while(b>0){

if(b%2==1)

r=(r\*a)%1000000007;

a=(a\*a)%1000000007;

b/=2;

}

cout<<r<<endl;

}

return 0;

}