//count set bits

/\* n=13 (00001101) output=3; \*/

#include<bits/stdc++.h>

using namespace std;

int countsetbits(int n)

{

int ans=0;

while(n>0)

{

int temp= (n & 1);

if(temp==1)

{

ans=ans+1;

}

n=n>>1;

}

return ans;

}

int countsetbitsfast(int n)

{

int ans=0;

while(n>0)

{

n=n&(n-1);

ans++;

}

return ans;

}

int main()

{

int n;

cin>>n;

cout<<countsetbits(n)<<endl;

cout<<countsetbitsfast(n)<<endl;

cout<<\_\_builtin\_popcount(n)<<endl;

//inbuilt function to count set bits

}