

# 交互题

## cf [Problem - D - Codeforces](#)

```
#include<bits/stdc++.h>
using namespace std;
int n;
int query(int l,int r)
{
    if(l==r)
        return 0;
    cout<<"?"<<" "<<l<<" "<<r<<"\n";

    int res;
    cin>>res;
    return res;
}
int solve(int l,int r)
{
    if(l==r)
        return l;
    int mid=(l+r)>>1;
    int a=solve(l,mid);
    int b=solve(mid+1,r);
    if(query(a,b-1)==query(a,b))
        return b;
    else
        return a;
}
int main()
{
    int t;
    cin>>t;
    while(t--)
    {
        cin>>n;
        int k=solve(1,n);
        cout<<"!"<<" "<<k<<"\n";
    }
    return 0;
}
```