Computer science

1. *Why is it a bad idea to use recursion method to find the fibonacci of a number?*

It's a bad idea to use recursion for this, because recursion works fine for smaller numbers, but as the number gets larger, the process becomes slower; for each Fibonacci call, memory in the stack is constantly being used(we can get around this by storing each Fibonacci calculated, though). Iteration will give faster results even with larger numbers.

2. *Write a function that takes in a Proth Number and uses Proth's theorem to determine if said number is prime? You can write this in any programming language but C/C++/Golang are preferred*

Solution

Written in JavaScript

```
let num=prompt("Enter the number");
let a=1;
let isprothnum = false;

function ispowertwo(num){
    if (num&& !(num&(num-1))){
        return true;
    }
    else{
        return false;
    }
}


function isproth(num){
    let k=1;
        while (k<(num/k)){
            if((num%k)==0){
                if(ispowertwo((num/k))){
                    return true;
                }
            }
            k=k+2;
        }
    return false;

}

if(isproth(num-1)){
    while(a<num){
        if(((a^((num-1)/2))%num)===1){
            isprothnum = true;
            break;
        }
        else{
```

```
            a++;
        }
    }
}else{
    console.log("Number is not proth");
}


if(isprothnum){
  console.log("Success: It is a Proth Prime");
}
else{
  console.log("Error: It is not a Proth Prime");
}
```