GREATEST COMMON DIVISOR

```
int gcd(int x, int y) {
                int temp;
                if (y=0)
                        return x;
                        if (x>=y && x!=0)
                                return gcd(y, x%y);
                } //recurrence



        }int gcd(int x, int y) {
        int temp;
        while (y!=0) {
                if (x>=y && x!=0) {
                        temp=x;
                        x=y;
                        y=x%y;
                }
        }
        return x;
  } //iteration
```

ACKERMANN'S FUNCTION

```
        int Ack(int x, int y) {
        if (x=0)
                return y+1;
        if (y=0)
                return Ack(x-1, 1);
}
```

```
int Ack(int x, int y) {
        while (x!=0){

        if (y=0)
                return Ack(x-1, 1);
}
return y+1;
}
```

FIBONACCI

```
int Fib(int x){
if (x=0)
return 0;
if x=1)
return 1;
if(x>1)
return Fib(x-1) + Fib(x-2)
}
int Fib(int x){
while (x!=0)
{
if x=1)
return 1;
if(x>1)
return Fib(x-1) + Fib(x-2)
}
return 0;
```

}

TOWER OF HANOI PROBLEM

```
Int hanoi(int n){
if(n=1)
return 1;
if (n>1)
return 2*Hanoi(n-1)+1
}

int hanoi(int n){
while(n!=1)
{
if (n>1)
return 2*Hanoi(n-1)+1
}
return 1;
}
```