Assignment - 13

①
```
#include<stdio.h>
int sum(int n);
int main()
{
    int n;
    printf("Enter a number");
    scanf("%d", &n);
    printf("sum = %d", sum(n));
    return 0;
}
int sum(int n)
{
    int s;
    If (n==1)
        return 1;
    s = n + sum(n-1);
    return s;
}
```

②
```
#include <stdio.h>
int sum(int n);
int main()
{
    int n;
    printf("Enter a number");
    scanf("%d", &n);
    printf("sum is %d", sum(n));
    return 0;
}
```

```
int sum (int n)
{
    If (n==1)
        return 1;
    return (2*n-1+sum(n-1));
}
```

(2)
```
#include<stdio.h>
int sum (int n);
int main()
{
    int n;
    printf("Enter a number");
    scanf("%d", &n);
    printf("sum=%d", sum(n));
    return 0;
}
int sum (int n)
{
    If (n==1)
        return 1;

    return (2*n-1 + sum (n-1));
}
```

④
```
#include<stdio.h>
int sqrsum(int x);
int main()
{
    int n;
    printf("enter a number");
    scanf("%d",&n);
    printf("sum=%d", sqrsum(n));
    return 0;
}
int sqrsum(int x)
{
    if(n==1)
        return 1;
    return(n*n + sqrsum(n-1));
}
```

⑤
```
#include<stdio.h>
int sumdigit(int n);
int main()
{
    int n;
    printf("enter a digit");
    scanf("%d",&n);
    printf("%d", sumdigit(n));
    return 0;
}
```

(7)

```
int sumdigit(int n)
{
    If (n%10==0)
        return n;
    return n%10+sum(n/10);
}
```

(8)

```
#include<stdio.h>
int fact(int n);
int main()
{
    int n;
    printf("enter a number");
    scanf("%d", &n);
    printf("factorial = %d", fact(n));
    return 0;
}
int fact(int n)
{
    If (n==1)
        return 1;
    return n*fact(n-1)
}
```

⑦
```
#include<stdio.h>
int HCF(int m, int n);
int main()
{
    int a, b;
    printf("Enter the number");
    scanf("%d %d", &a, &b);
    printf("HCF=%d", HCF(m,n));
    return 0;
}
int HCF(int m, int n)
{
    If(m%n==0)
        return n;
    If(n%m==0)
        return m;
    If(m>n)
        return(HCF(m%n, n));
    else
        return(HCF(m, n%m));
}
```

(Q)-

```
#include<stdio.h>
int fibonacci(int m);
int main()
{
    int n;
    printf("enter a number");
    scanf("%d",&n);
    printf("fibonacci=%d", fibonacci(n
    return 0;
}
int fibonacci(int m)
{
    If(m==0)
        return 0;
    If(m==1)
        return 1;
    If(m>1)
        return fibonacci(n-1)+
        fibonacci(n-2);
}
```

(9)
```
#include<stdio.h>
int digitnum(int n);
int main()
{
    int n;
    printf("enter the number");
    scanf("%d",&n);
    printf("digit = %d",digitnum(n));
    return 0;
}

int count
int count=0;
main()
{
int digitnum(int n)
{
  if(n>0)
  {
      digitnum(n/10);
       count++;
  }
  return count;
}
```

(10)

```
#include <stdio.h>
int number (int m);
int main()
{
    int n;
    printf("Enter a number");
    scanf("%d", &n);
    printf("num = %d", number(n));
    return 0;
}

int number(int m)
{
    if(m==1)
        return 1;
    return number(sqrt(n));
}
```