Q1.Write a function to calculate LCM of two numbers. (TSRS)

```c
#include <stdio.h>

int lcm(int, int);

int main(int argc, char *argv[])
{
    int a, b;

    printf("Enter two number = ");
    scanf("%d %d", &a, &b);

    printf("LCM = %d", lcm(a, b));

    return 0;
}

int lcm(int a, int b)
{
    int i = 2, ans = 1, flag = 0;

    while (a != 1 || b != 1)
    {
        if (a % i == 0)
        {
            a = a / i;
            flag = 1;
        }

        if (b % i == 0)
        {
            b = b / i;
            flag = 1;
        }

        if (flag == 1)
        {
```

```
            ans = ans * i;
            flag = 0;
        }

        if ((a % i != 0) && (b % i != 0))
            i = i + 1;
    }
    return ans;
}
```

Q2.Write a function to calculate HCF of two numbers. (TSRS)

```c
#include <stdio.h>

int hcf(int, int);

int main(int argc, char *argv[])
{
    int a, b;

    printf("Enter two number = ");
    scanf("%d %d", &a, &b);

    printf("HCF = %d", hcf(a, b));

    return 0;
}

int hcf(int a, int b)
{
    int i = 2, ans = 1, flag = 0;

    while (i <= a && i <= b)
    {
        if ((a % i == 0) && (b % i == 0))
        {
            a = a / i;
            b = b / i;
            flag = 1;
        }

        if (flag == 1)
        {
            ans = ans * i;
            flag = 0;
        }

        if ((a % i != 0) || (b % i != 0))
```

```
            i = i + 1;
        }
        return ans;
    }
```

Q3.Write a function to check whether a given number is Prime or not. (TSRS)

```c
#include <stdio.h>

int prime(int);

int main(int argc, char *argv[])
{
    int a;

    printf("Enter number = ");
    scanf("%d", &a);

    if (prime(a))
        printf("Number is prime");
    else
        printf("Number is not prime");

    return 0;
}

int prime(int a)
{
    int i = 2;

    while (a / 2 >= i)
    {
        if (a % i == 0)
            return 0;
        else
            i = i + 1;
    }
    return 1;
}
```

Q4.Write a function to find the next prime number of a given number. (TSRS)

```c
#include <stdio.h>

int prime(int);

int main(int argc, char *argv[])
{
    int a;

    printf("Enter number = ");
    scanf("%d", &a);

    printf("\nNext prime number = %d", prime(a));

    return 0;
}

int prime(int a)
{
    int i = 2;

    a = a + 1;

    while (a / 2 >= i)
    {
        if (a % i == 0)
            a = a + 1;
        else
            i = i + 1;
    }
    return a;
}
```

Q5.Write a function to print first N prime numbers (TSRN)

```c
#include <stdio.h>

void prime(int);

int main(int argc, char *argv[])
{
    int a;

    printf("Enter number = ");
    scanf("%d", &a);

    prime(a);

    return 0;
}

void prime(int a)
{
    int i = 2, num = 1, flag=0;

    while (num <= a)
    {
        while (num / 2 >= i)
        {
            if (num % i == 0)
            {
                flag = 1;
                break;
            }
            else
                i = i + 1;
        }
        if (flag == 0)
            printf("%d ", num);

        i = 2;
```

```
            num = num + 1;
            flag = 0;
        }
    }
```

Q6.Write a function to print all Prime numbers between two given numbers. (TSRN)

```c
#include <stdio.h>

void prime(int, int);

int main(int argc, char *argv[])
{
    int a, b;

    printf("Enter two number = ");
    scanf("%d %d", &a, &b);

    prime(a, b);

    return 0;
}

void prime(int a, int b)
{
    int i = 2, flag = 0;

    while (a <= b)
    {
        while (a / 2 >= i)
        {
            if (a % i == 0)
            {
                flag = 1;
                break;
            }
            else
                i = i + 1;
        }
        if (flag == 0)
            printf("%d ", a);

        i = 2;
```

```
            a = a + 1;
            flag = 0;
        }
    }
```

Q7.Write a function to print first N terms of Fibonacci series (TSRN)

```c
#include <stdio.h>

void fib(int);

int main(int argc, char *argv[])
{
    int num;

    printf("Enter number = ");
    scanf("%d", &num);

    fib(num);

    return 0;
}

void fib(int num)
{
    int a = 0, b = 1, ans;

    printf("%d %d ",0,1);

    for (int i = 1; i <= (num-2); i++)
    {
        ans = a + b;
        printf("%d ", ans);

        a = b;
        b = ans;
    }
}
```

Q8.Write a function to print PASCAL Triangle. (TSRN)

```c
#include <stdio.h>

int fact(int);
int nCr(int, int);
void PascalTriangle(int);

int main(int argc, char *argv[])
{
    int value;

    printf("Enter value = ");
    scanf("%d",&value);

    PascalTriangle(value);

    return 0;
}

int fact(int num)
{
    int ans = 1;

    for (int i = 2; i <= num; i++)
        ans *= i;

    return ans;
}

int nCr(int n, int r)
{
    return (fact(n) / (fact(r) * fact(n - r)));
}

void PascalTriangle(int num)
{
    int space = num;
```

```
    for (int i = 0; i <= num; i++)
    {
        for (int x = 1; x <= space; x++)
        {
            printf(" ");
        }

        for (int j = 0; j <= i; j++)
        {
            int ncr = nCr(i,j);

            if (ncr <= 9)
                printf("%2d ", ncr);
            else
                printf("%d ", ncr);
        }
        printf("\n");
        space = space - 1;
    }
}
```

Q9.Write a program in C to find the square of any number using the function.

```c
#include <stdio.h>

float Square(float);

int main(int argc, char *argv[])
{
    float num;

    printf("Enter number = ");
    scanf("%f", &num);

    printf("\nSquare = %.2f", Square(num));

    return 0;
}

float Square(float num)
{
    return(num*num);
}
```

Q10.Write a program in C to find the sum of the series 1!1+2!/2+3!/3+4!/4+5!/5 using the function.

```c
#include <stdio.h>
int fact(int);
int series(int);

int main(int argc, char *argv[])
{
    printf("sum is = %d",series(5));

    return 0;
}

int fact(int num)
{
    int ans = 1;

    for (int i = 2; i <= num; i++)
        ans *= i;

    return ans;
}

int series(int i)
{
    int sum = 0;

    while (i)
    {
        sum = sum + (fact(i)/i);
        i=i-1;
    }
    return sum;
}
```