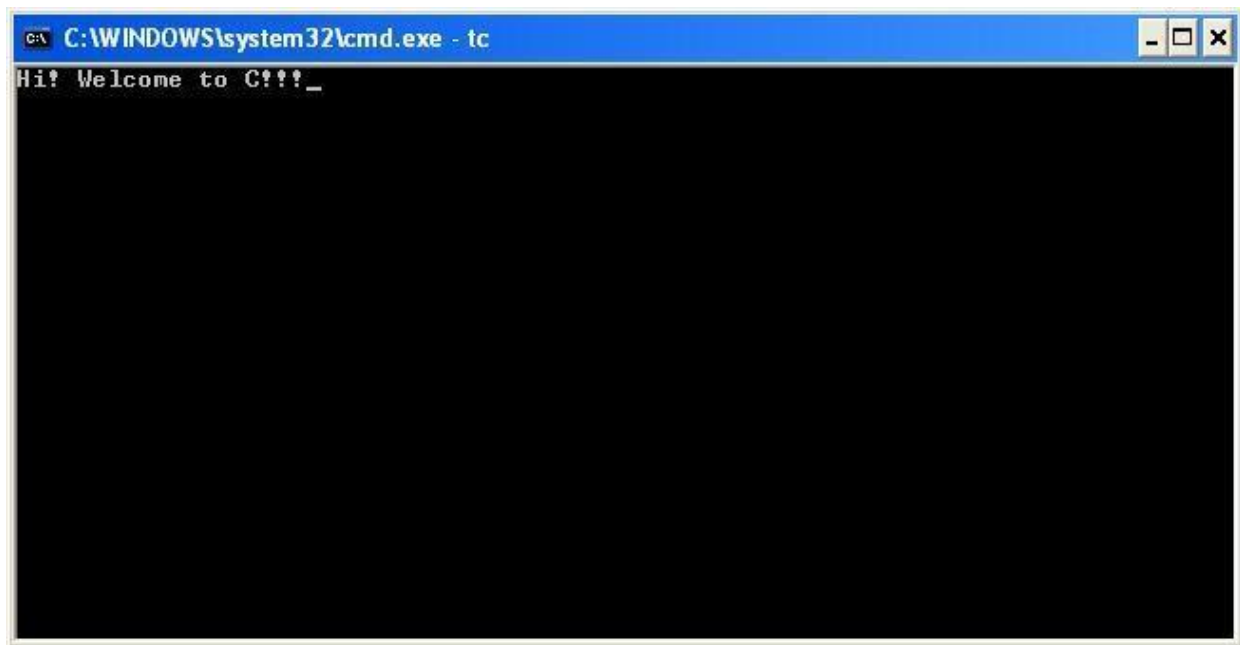


1. Write a C program to print welcome message.

```
#include<stdio.h>
#include<conio.h>
void main()
{
    clrscr();
    printf("Hi! Welcome to C!!!");
    getch();
}
```



2. Write a C program to perform addition of two integer numbers.

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int a,b,c; // Variable declaration
    clrscr();

    printf("Enter any two integer values: ");
    scanf("%d%d",&a,&b);
    c = a + b;
    printf("SUM of given two numbers is %d",c);
    getch();
}
```



```
C:\WINDOWS\system32\cmd.exe - tc
Enter any two integer values: 10 20
SUM of given two numbers is 30
```

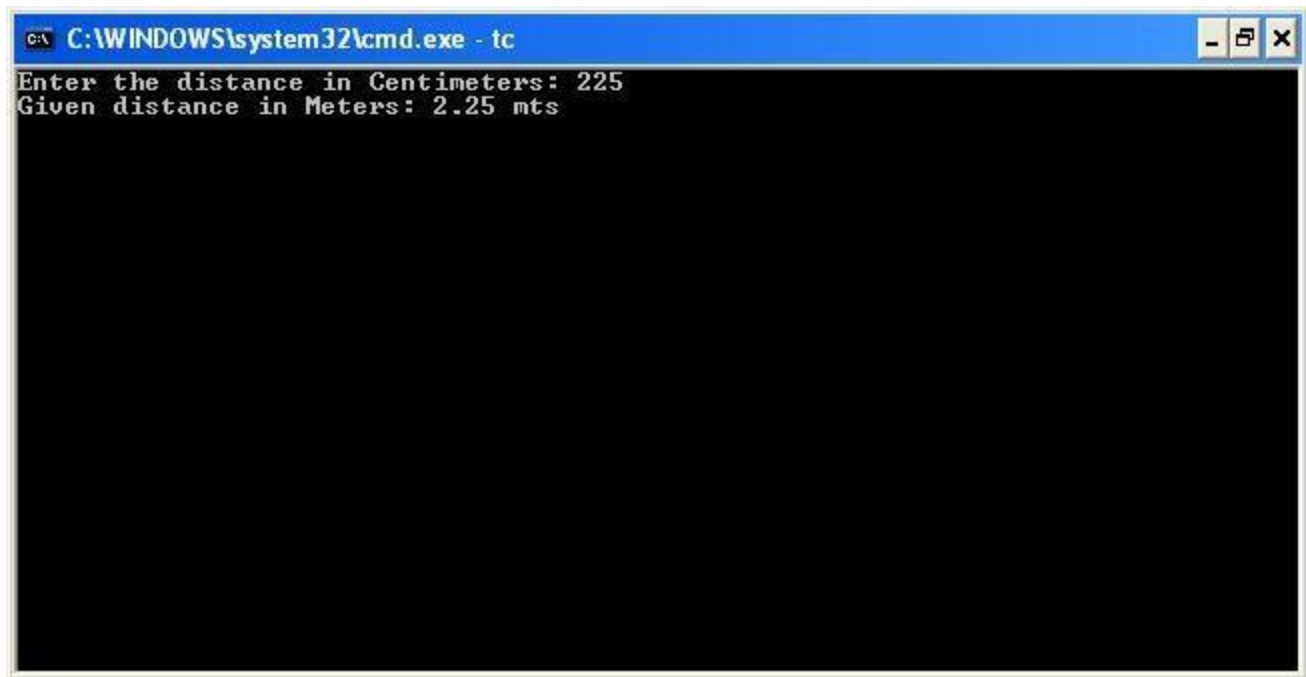
3. Write a C program to convert distance from cm to mts.

```
#include<stdio.h>
#include<conio.h>
void main()
{
    float cm, mts;
    clrscr();

    printf("Enter the distance in Centimeters: ");
    scanf("%f",&cm);

    mts = cm / 100;
    printf("Given distance in Meters: %.2f mts",mts);

    getch();
}
```

A screenshot of a Windows command prompt window. The title bar is blue and contains the text "C:\WINDOWS\system32\cmd.exe - tc". The window has standard Windows window controls (minimize, maximize, close) on the right. The command prompt shows the following text: "Enter the distance in Centimeters: 225" followed by "Given distance in Meters: 2.25 mts". The background of the command prompt is black, and the text is white.

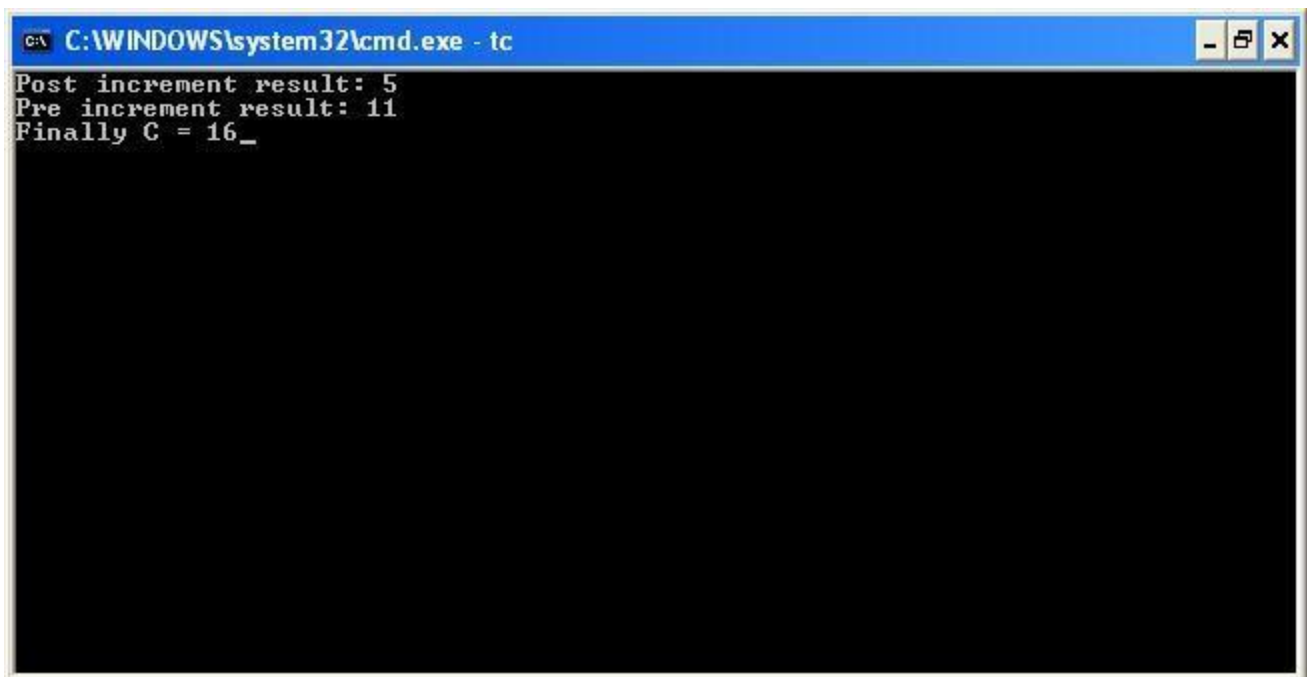
4. Write a C program to illustrate increment and decrement operators.

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int a = 5, b = 10, c, d;
    clrscr();

    c = a++;
    d = ++b;
    printf("Post increment result: %d\n",c);
    printf("Pre increment result: %d\n",d);

    c = a-- + --b;
    printf("Finally C = %d",c);

    getch();
}
```



The screenshot shows a Windows command prompt window titled "C:\WINDOWS\system32\cmd.exe - tc". The window has a blue title bar and standard Windows window controls (minimize, maximize, close). The command prompt displays the output of the C program: "Post increment result: 5", "Pre increment result: 11", and "Finally C = 16_". The text is white on a black background.

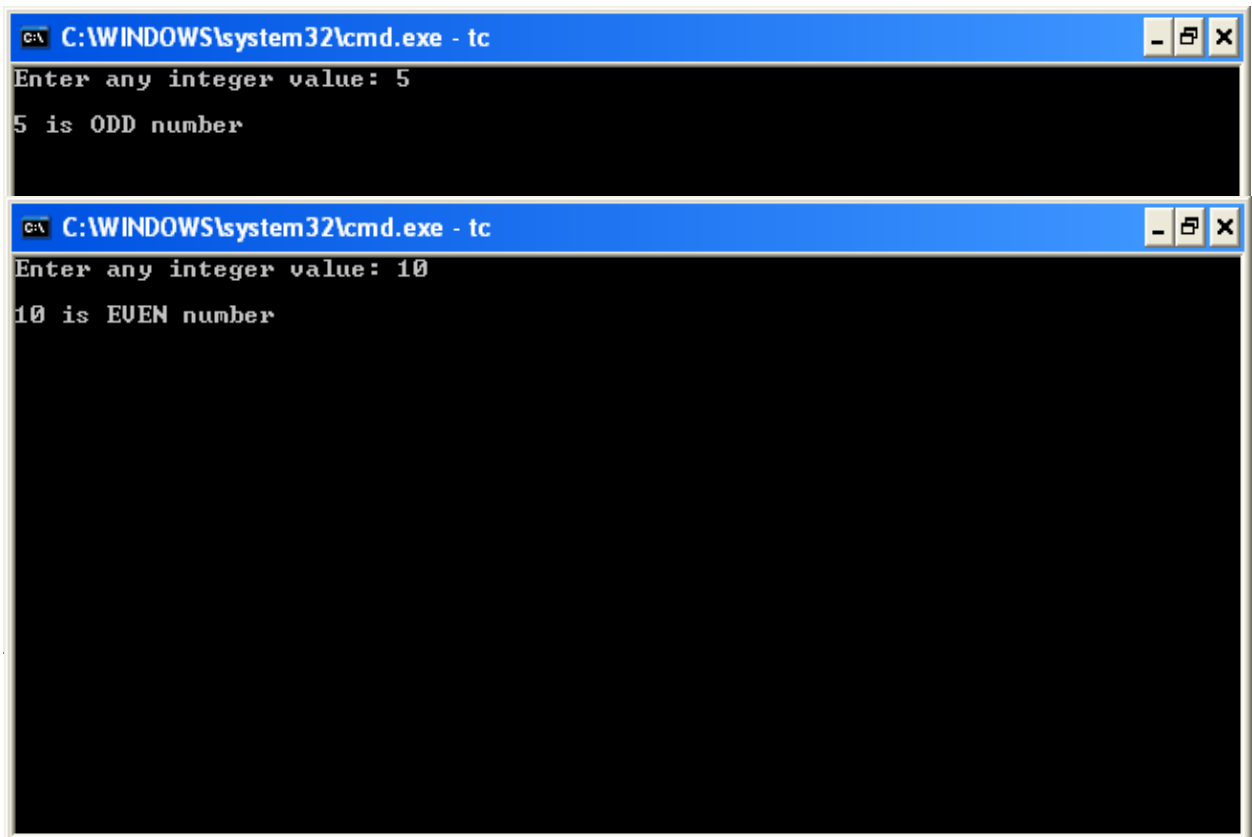
5. Write a C program to test whether given number is EVEN or ODD.

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int num;
    clrscr();

    printf("Enter any integer value: ");
    scanf("%d",&num);

    if(num % 2 == 0)
        printf("\n%d is EVEN number");
    else
        printf("\n%d is ODD number");

    getch();
}
```



The image displays two screenshots of a Windows command prompt window, titled "C:\WINDOWS\system32\cmd.exe - tc".

The first screenshot shows the program's execution with the input "5". The output displayed is "5 is ODD number".

The second screenshot shows the program's execution with the input "10". The output displayed is "10 is EVEN number".

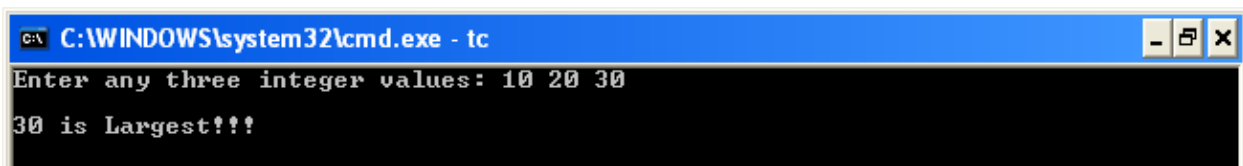
6. Write a C program to find largest of three numbers.

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int a,b,c;
    clrscr();

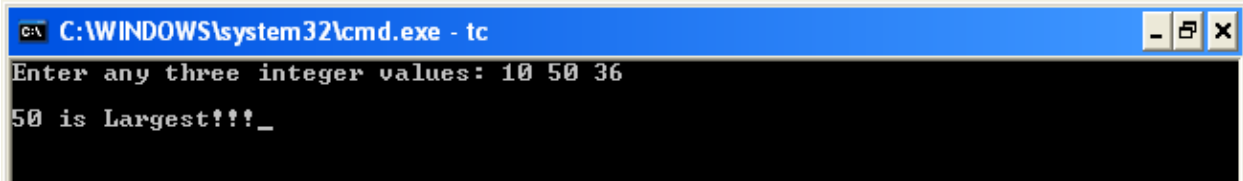
    printf("Enter any three integer values: ");
    scanf("%d%d%d",&a,&b,&c);

    if(a>b && a>c)
        printf("\n%d is Largest!!!",a);
    else
        if(b>a && b>c)
            printf("\n%d is Largest!!!",b);
        else
            printf("\n%d is Largest!!!",c);

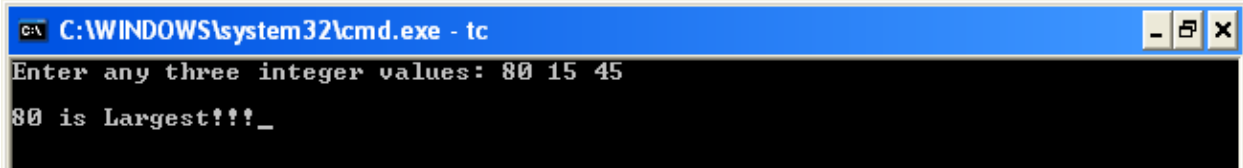
    getch();
}
```



```
C:\WINDOWS\system32\cmd.exe - tc
Enter any three integer values: 10 20 30
30 is Largest!!!
```



```
C:\WINDOWS\system32\cmd.exe - tc
Enter any three integer values: 10 50 36
50 is Largest!!!_
```



```
C:\WINDOWS\system32\cmd.exe - tc
Enter any three integer values: 80 15 45
80 is Largest!!!_
```

7. Write a C program to swap (exchange) given two numbers.

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int num1, num2, temp;
    clrscr();

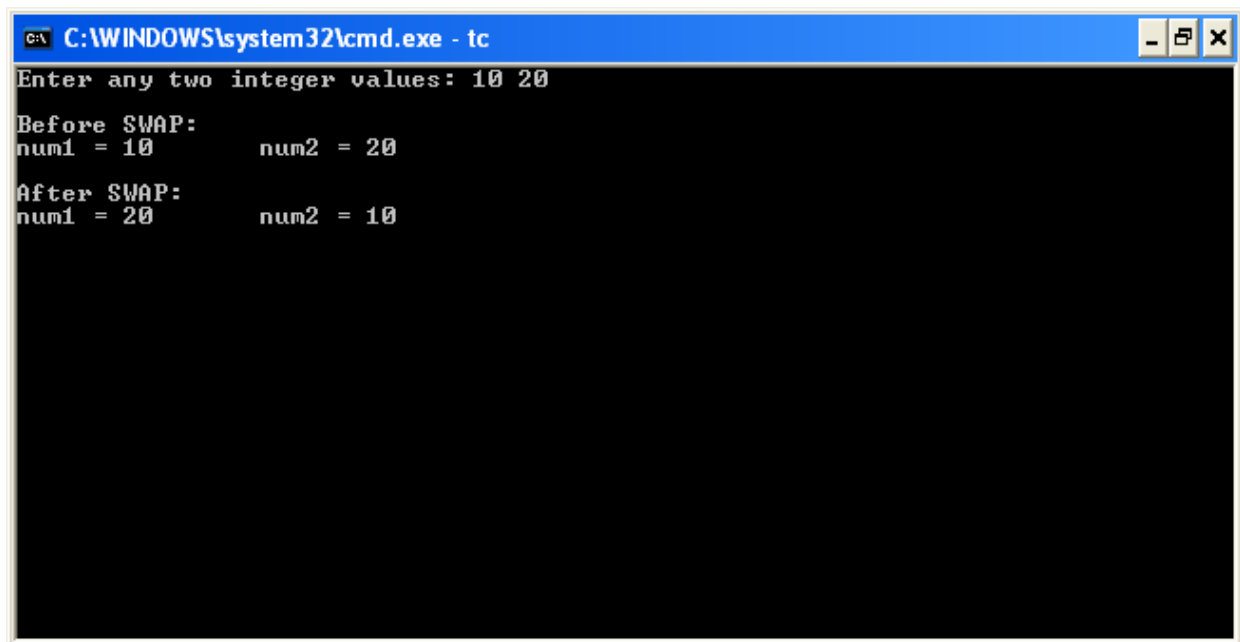
    printf("Enter any two integer values: ");
    scanf("%d%d", &num1, &num2);

    printf("\nBefore SWAP:\nnum1 = %d\t num2 = %d", num1, num2);

    temp = num1;
    num1 = num2;
    num2 = temp;

    printf("\n\nAfter SWAP:\nnum1 = %d\t num2 = %d", num1, num2);

    getch();
}
```

A screenshot of a Windows command prompt window titled "C:\WINDOWS\system32\cmd.exe - tc". The window has a blue title bar and standard Windows window controls (minimize, maximize, close). The command prompt shows the following text:
Enter any two integer values: 10 20

Before SWAP:
num1 = 10 num2 = 20

After SWAP:
num1 = 20 num2 = 10
The text is displayed in a monospaced font on a black background.

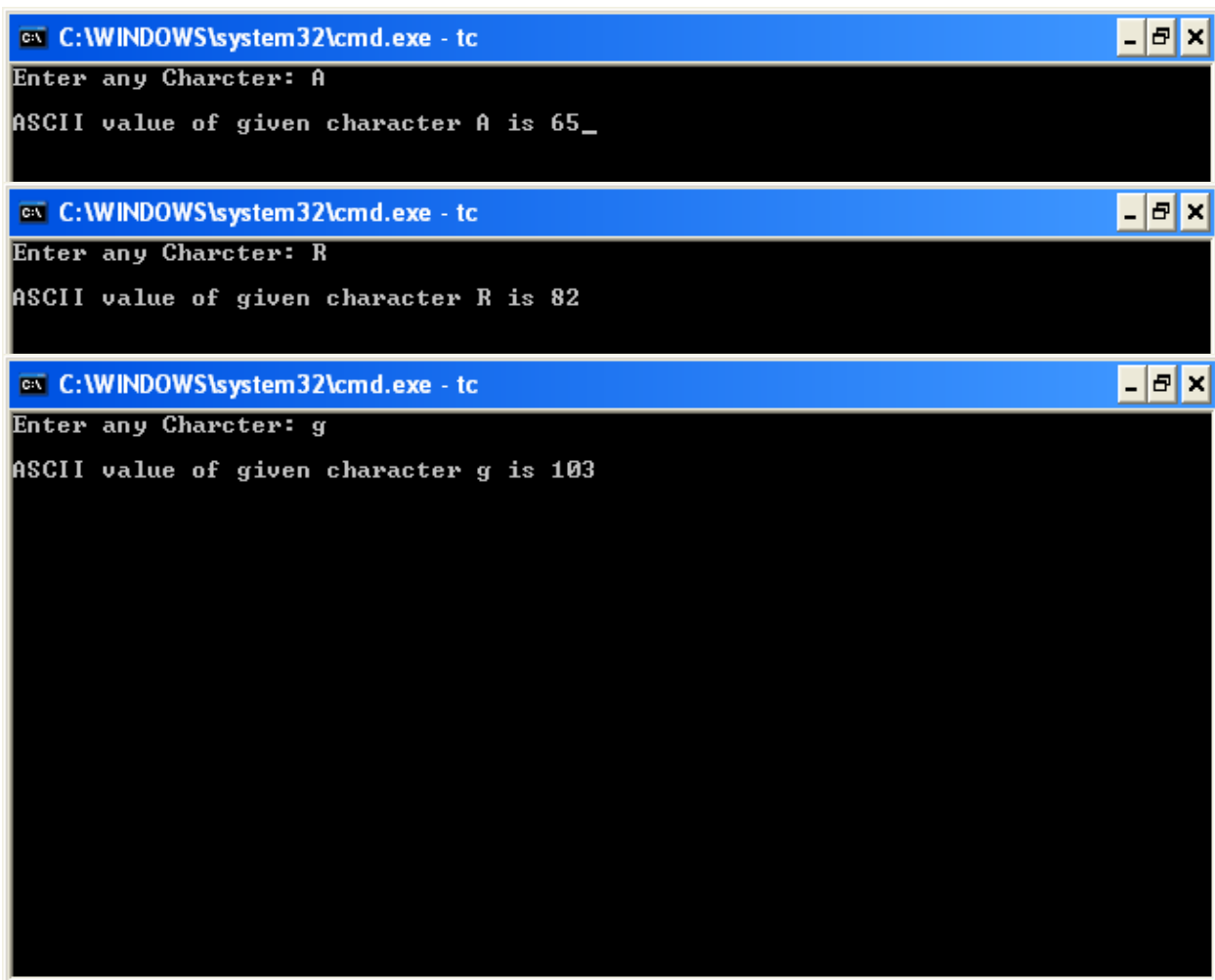
8. Write a C program to print ASCII value of given character.

```
#include<stdio.h>
#include<conio.h>
void main()
{
    char ch;
    clrscr();

    printf("Enter any Character: ");
    scanf("%c",&ch);

    printf("\nASCII value of given character %c is %d",ch,ch);

    getch();
}
```



9. Write a C program to find roots of a quadratic equation.

```

#include<stdio.h>
#include<conio.h>
#include<math.h>
void main()
{
    float a,b,c, root1,root2,temp, real, imag;
    clrscr();

    printf("Enter any a, b and c values: ");
    scanf("%f%f%f",&a,&b,&c);

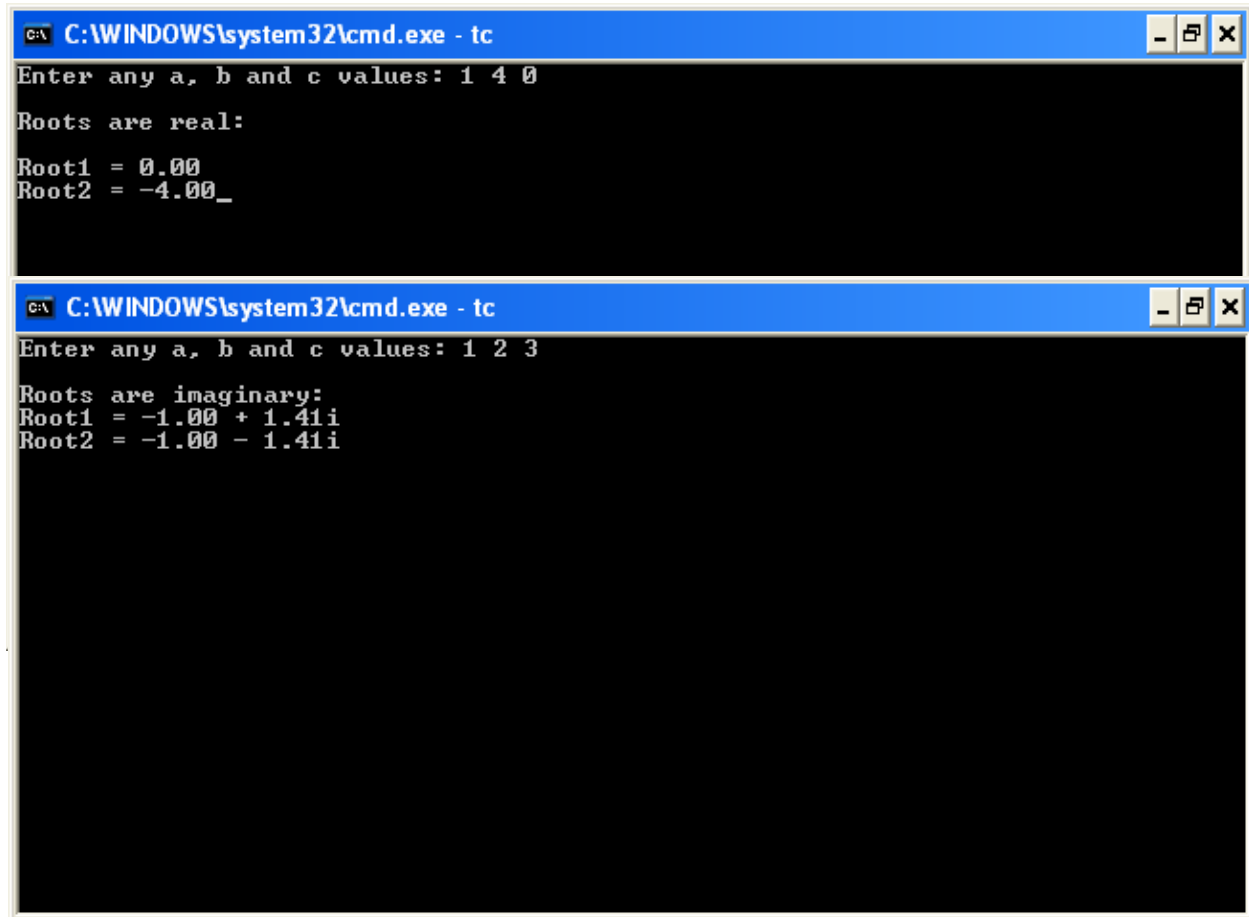
    temp = (b*b) - (4*a*c);
    if(temp>0)
    {
        printf("\nRoots are real:\n");
        root1 = (-b + sqrt(temp))/(2*a);
        root2 = (-b - sqrt(temp))/(2*a);

        printf("\nRoot1 = %.2f",root1);
        printf("\nRoot2 = %.2f",root2);
    }
    else{
        if(temp == 0)
        {
            printf("\nRoots are real:\n");
            root1 = root2 = -b/(2*a);

            printf("\nRoot1 = %.2f",root1);
            printf("\nRoot2 = %.2f",root2);
        }
        else
        {
            real = -b / (2*a);
            imag = sqrt(-temp) / (2*a);
            printf("\nRoots are imaginary:\n");
            printf("Root1 = %.2f + %.2fi",real,imag);
            printf("\nRoot2 = %.2f - %.2fi",real,imag);
        }
    }

    getch();
}

```



```
C:\WINDOWS\system32\cmd.exe - tc
Enter any a, b and c values: 1 4 0
Roots are real:
Root1 = 0.00
Root2 = -4.00_

C:\WINDOWS\system32\cmd.exe - tc
Enter any a, b and c values: 1 2 3
Roots are imaginary:
Root1 = -1.00 + 1.41i
Root2 = -1.00 - 1.41i
```

10. Write a C program to find Area and Circumference of a Circle.

```
#include<stdio.h>
#include<conio.h>

#define PI 3.14

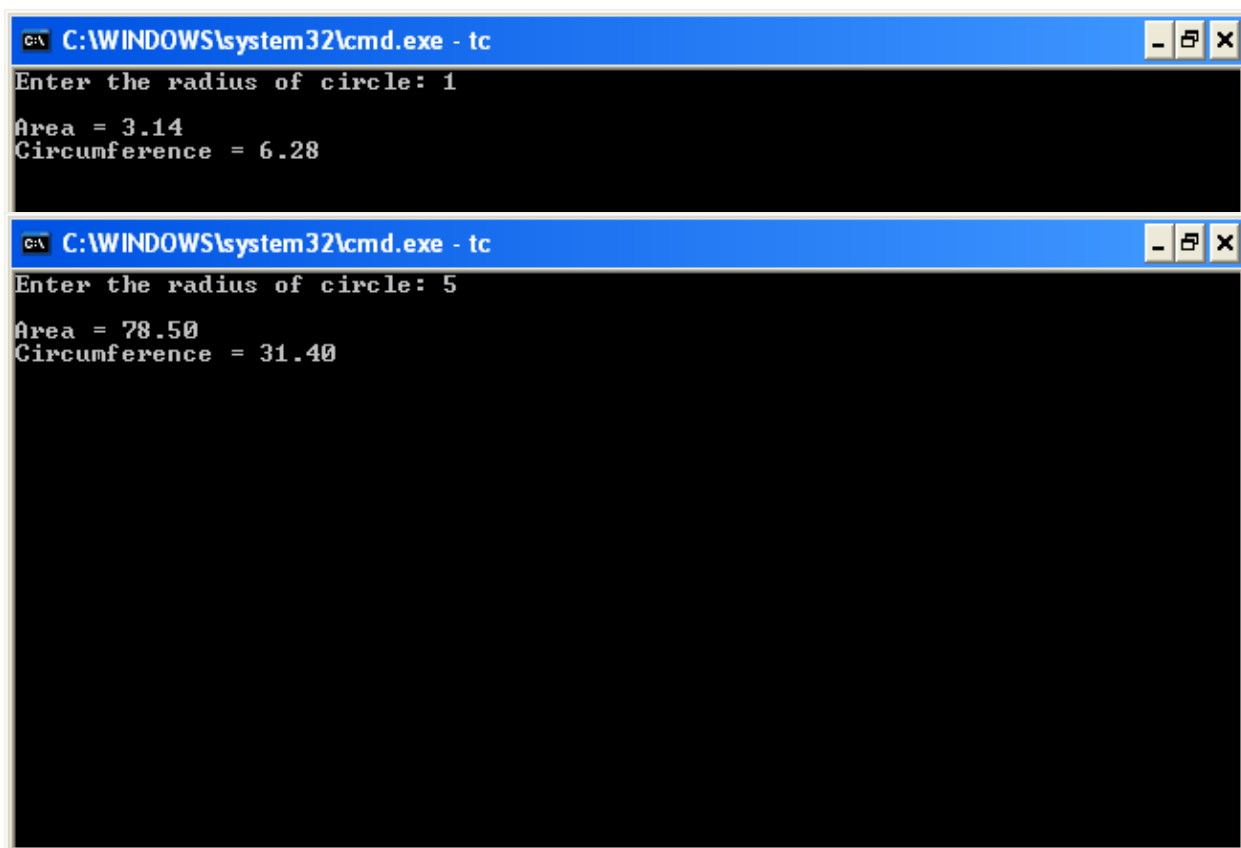
void main()
{
    float radius,area,circumference;
    clrscr();

    printf("Enter the radius of circle: ");
    scanf("%f",&radius);

    area = PI*(radius*radius);
    circumference = 2 * PI * radius;

    printf("\nArea = %.2f",area);
    printf("\nCircumference = %.2f",circumference);

    getch();
}
```



The image shows two screenshots of a Windows command prompt window. The title bar of the window is blue and contains the text "C:\WINDOWS\system32\cmd.exe - tc". The first screenshot shows the program running with the input radius of 1. The output is "Area = 3.14" and "Circumference = 6.28". The second screenshot shows the program running with the input radius of 5. The output is "Area = 78.50" and "Circumference = 31.40".

```
C:\WINDOWS\system32\cmd.exe - tc
Enter the radius of circle: 1
Area = 3.14
Circumference = 6.28

C:\WINDOWS\system32\cmd.exe - tc
Enter the radius of circle: 5
Area = 78.50
Circumference = 31.40
```

11. Write a C program to find Area of a Triangle.

```
#include<stdio.h>
#include<conio.h>

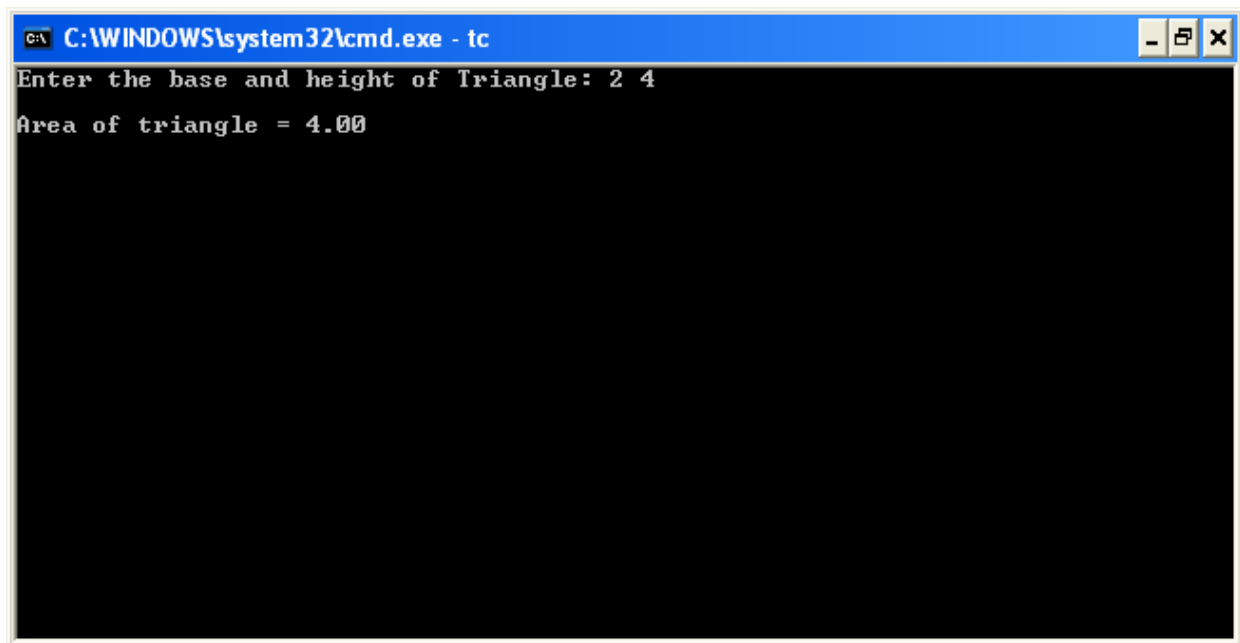
void main()
{
    float base,height,area;
    clrscr();

    printf("Enter the base and height of Triangle: ");
    scanf("%f%f", &base,&height);

    area = (0.5) * base * height;

    printf("\nArea of triangle = %.2f",area);

    getch();
}
```

A screenshot of a Windows command prompt window. The title bar is blue and contains the text "C:\WINDOWS\system32\cmd.exe - tc" along with standard window control buttons (minimize, maximize, close). The command prompt has a black background with white text. The first line of text is "Enter the base and height of Triangle: 2 4". The second line of text is "Area of triangle = 4.00".

```
C:\WINDOWS\system32\cmd.exe - tc
Enter the base and height of Triangle: 2 4
Area of triangle = 4.00
```

12. Write a C program to find Factorial of a given integer number.

```
#include<stdio.h>
#include<conio.h>

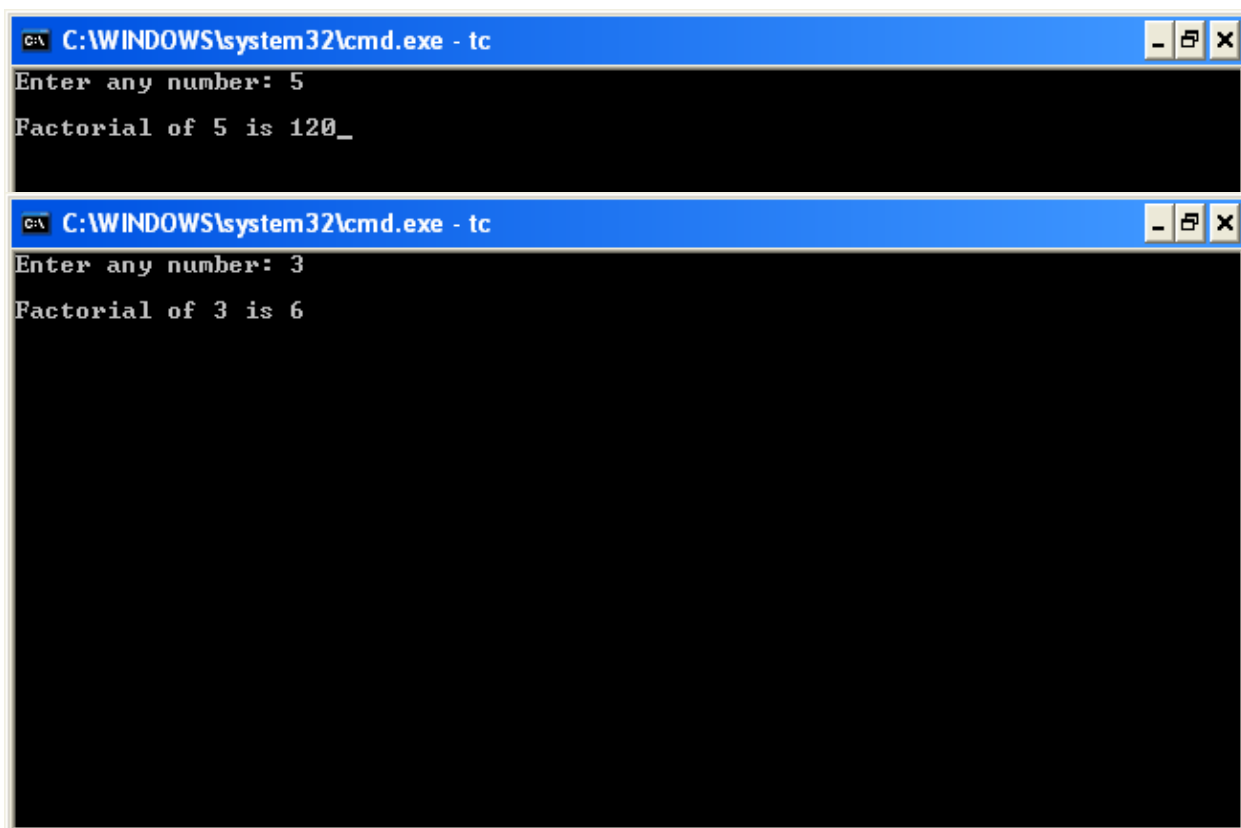
void main()
{
    int num,fact=1,i;
    clrscr();

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

    for(i = num; i >= 1; i--)
    {
        fact = fact * i;
    }

    printf("\nFactorial of %d is %d",num,fact);

    getch();
}
```



The image shows two screenshots of a Windows command prompt window. The title bar of the window is blue and reads "C:\WINDOWS\system32\cmd.exe - tc".

The first screenshot shows the program running with the input "5". The output is "Factorial of 5 is 120_".

The second screenshot shows the program running with the input "3". The output is "Factorial of 3 is 6".

13. Write a C program to test whether given number is PRIME or NOT.

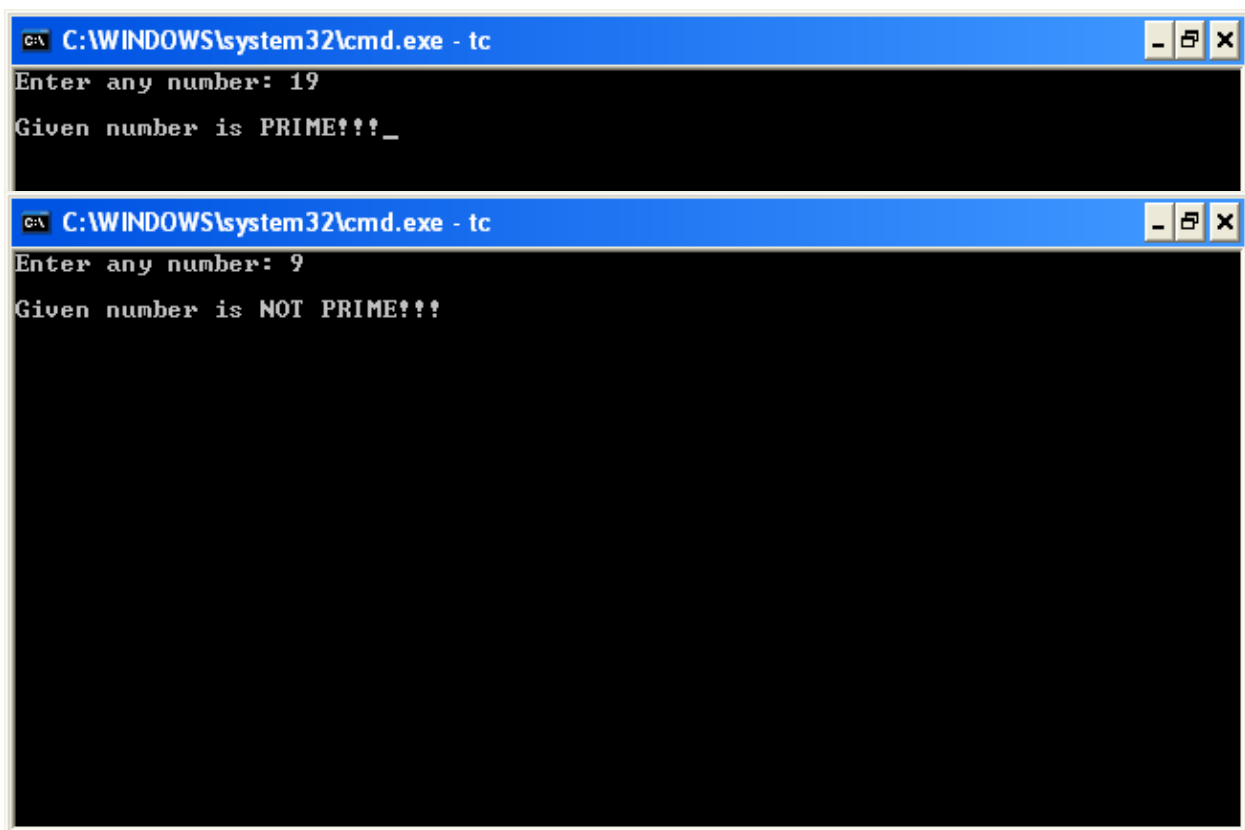
```
#include<stdio.h>
#include<conio.h>

void main()
{
    int num,count=0,i;
    clrscr();

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

    for(i = 2; i < num; i++)
    {
        if(num%i == 0)
            count++;
    }
    if(count == 0)
        printf("\nGiven number is PRIME!!!");
    else
        printf("\nGiven number is NOT PRIME!!!");

    getch();
}
```



The image shows two screenshots of a Windows command prompt window. The title bar of the window is blue and contains the text "C:\WINDOWS\system32\cmd.exe - tc". The first screenshot shows the prompt "Enter any number: 19" followed by the output "Given number is PRIME!!!". The second screenshot shows the prompt "Enter any number: 9" followed by the output "Given number is NOT PRIME!!!".

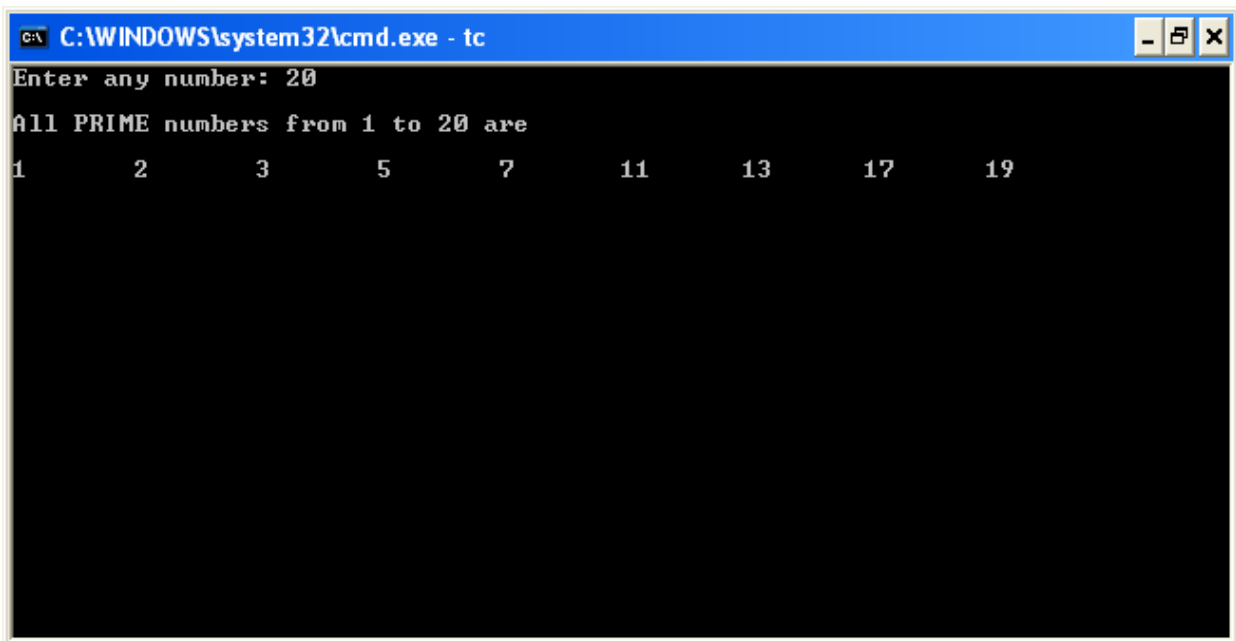
14. Write a C program to print all PRIME numbers up to 'n'.

```
#include<stdio.h>
#include<conio.h>

void main()
{
    int num,count,i,value;
    clrscr();

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

    printf("\nAll PRIME numbers from 1 to %d are\n\n",num);
    value = 1;
    while(value<=num){
        count = 0;
        for(i = 2; i < value; i++){
            if(value%i == 0)
                count++;
        }
        if(count == 0)
            printf("%d\t",value);
        value++;
    }
    getch();
}
```



The screenshot shows a Windows command prompt window titled "C:\WINDOWS\system32\cmd.exe - tc". The program has been executed with the input number 20. The output displays the prime numbers from 1 to 20: 1, 2, 3, 5, 7, 11, 13, 17, and 19. The numbers are printed in a single line, separated by tabs.

```
C:\WINDOWS\system32\cmd.exe - tc
Enter any number: 20
All PRIME numbers from 1 to 20 are
1      2      3      5      7      11     13     17     19
```

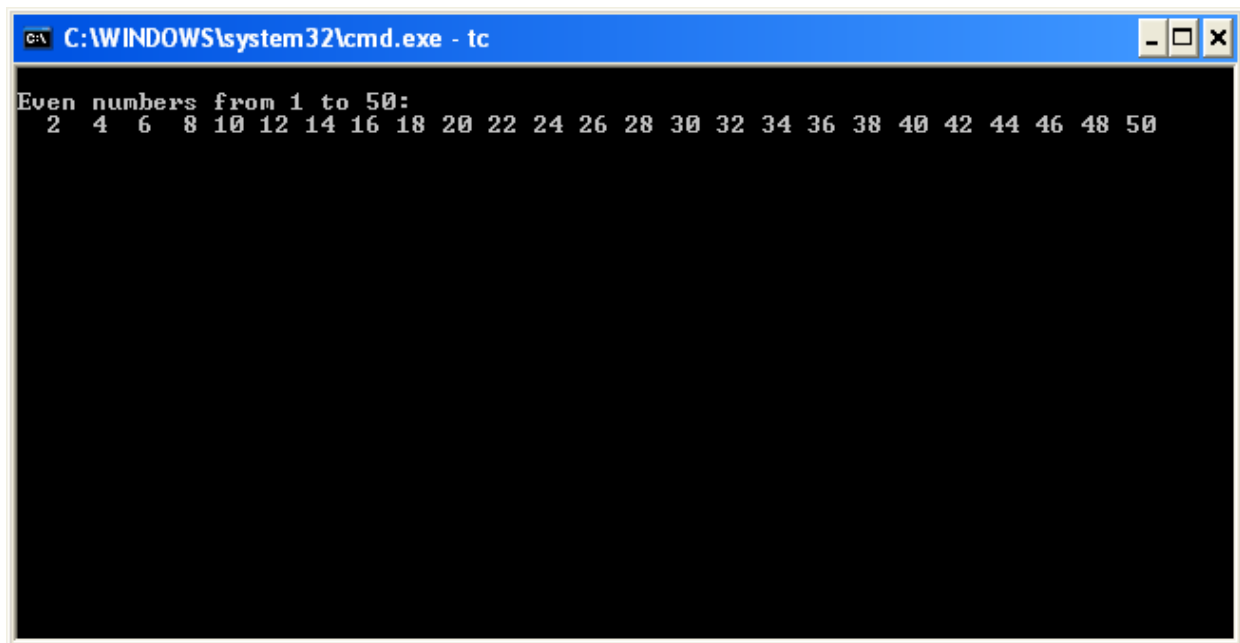
15. Write a C program to print all EVEN numbers from 1 to 50.

```
#include<stdio.h>
#include<conio.h>

void main()
{
    int count = 1;
    clrscr();

    printf("\nEven numbers from 1 to 50:\n");
    while(count<=50)
    {
        if(count%2 == 0)
            printf("%3d",count);
        count++;
    }

    getch();
}
```

A screenshot of a Windows command prompt window. The title bar is blue and contains the text "C:\WINDOWS\system32\cmd.exe - tc". The window has standard Windows window controls (minimize, maximize, close) on the right. The command prompt area has a black background with white text. The first line of output is "Even numbers from 1 to 50:". The second line displays the even numbers from 2 to 50, formatted with a width of 3 characters: "2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50".

```
C:\WINDOWS\system32\cmd.exe - tc
Even numbers from 1 to 50:
 2  4  6  8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50
```



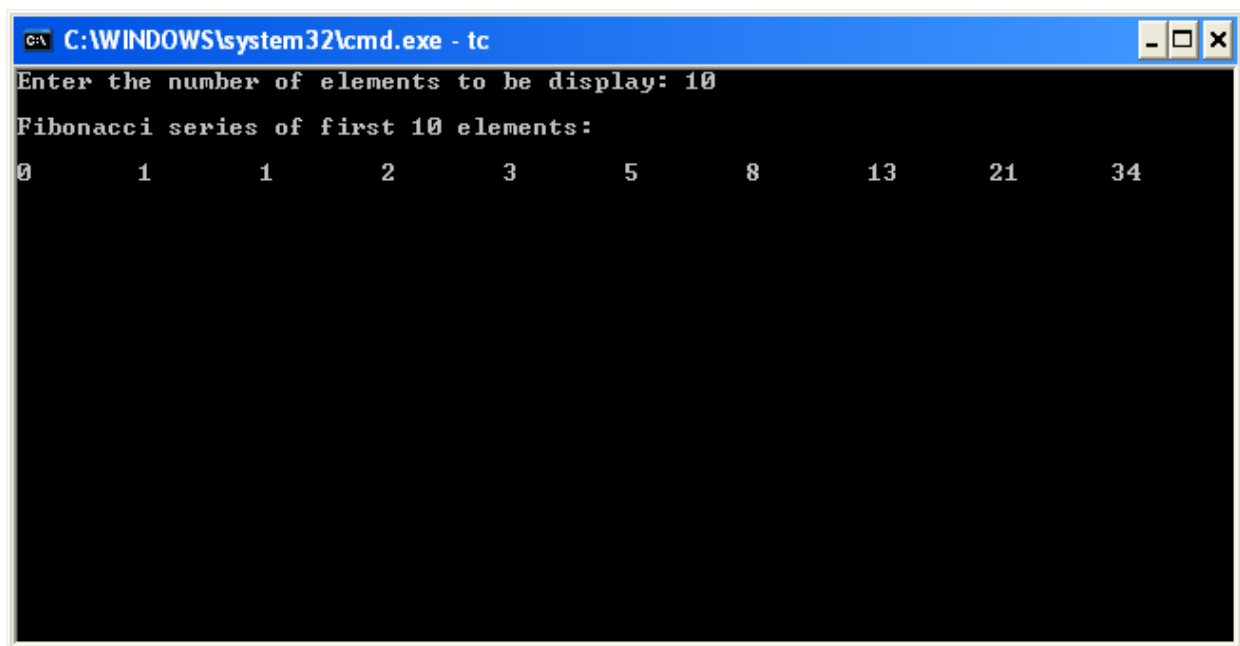
```
#include<stdio.h>
#include<conio.h>

void main()
{
    int a=0,b=1,c,n,count = 3;
    clrscr();

    printf("Enter the number of elements to be display: ");
    scanf("%d",&n);

    printf("\nFibonacci series of first %d elements:\n",n);
    printf("\n%d\t%d",a,b);
    while(count<=n)
    {
        c = a + b;
        printf("\t%d",c);
        a = b;
        b = c;
        count++;
    }

    getch();
}
```



```
C:\WINDOWS\system32\cmd.exe - tc
Enter the number of elements to be display: 10
Fibonacci series of first 10 elements:
0      1      1      2      3      5      8      13      21      34
```

17. Write a C program to print REVERSE of given integer number.

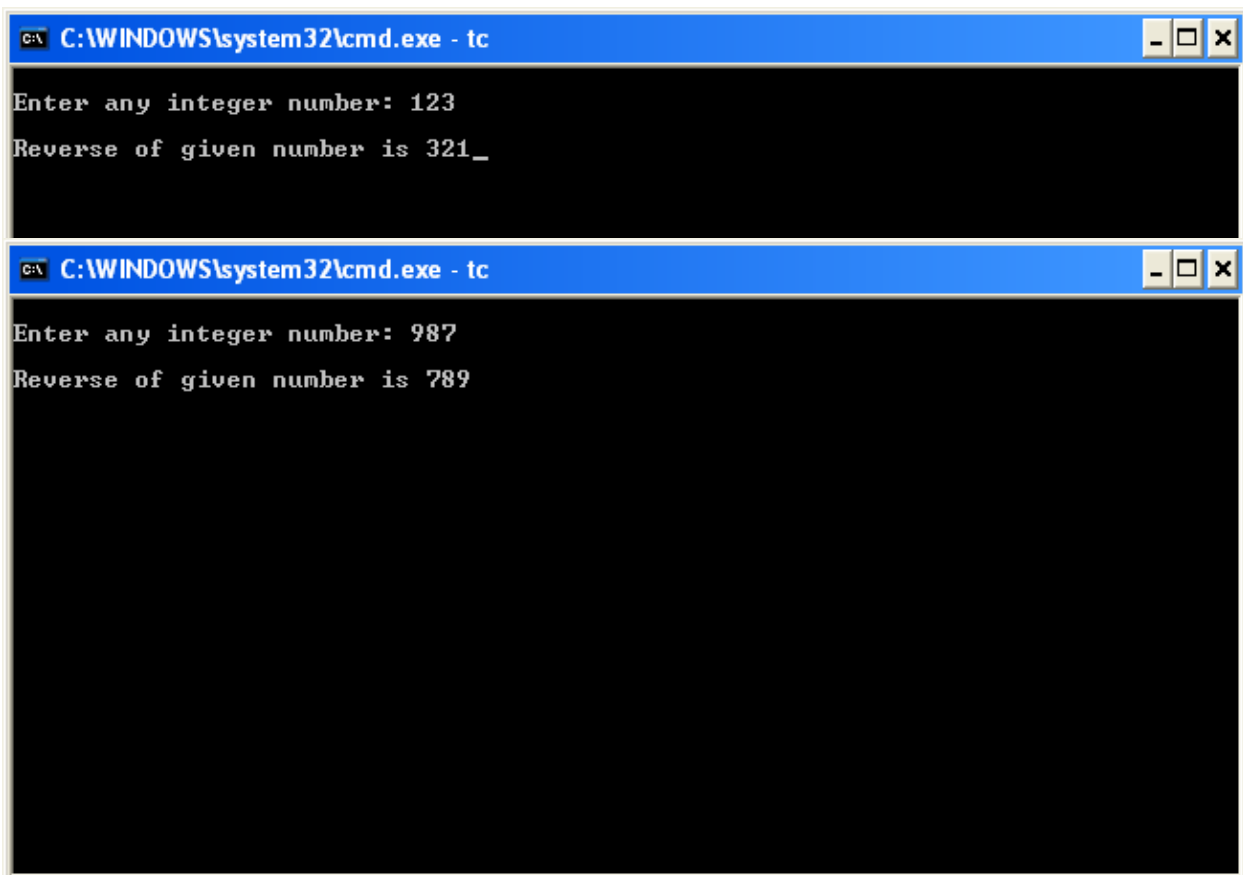
```
#include<stdio.h>
#include<conio.h>

void main()
{
    int num,reverse=0,remainder;
    clrscr();

    printf("\nEnter any integer number: ");
    scanf("%d",&num);

    while(num>0)
    {
        remainder = num % 10;
        reverse = reverse * 10 + remainder;
        num = num / 10;
    }
    printf("\nReverse of given number is %d",reverse);

    getch();
}
```



The image shows two screenshots of a Windows command prompt window. The title bar of the window is blue and contains the text 'C:\WINDOWS\system32\cmd.exe - tc'. The first screenshot shows the prompt 'Enter any integer number: 123' and the output 'Reverse of given number is 321_'. The second screenshot shows the prompt 'Enter any integer number: 987' and the output 'Reverse of given number is 789'.

18. Write a C program to test whether given number is POLINDROME or NOT.

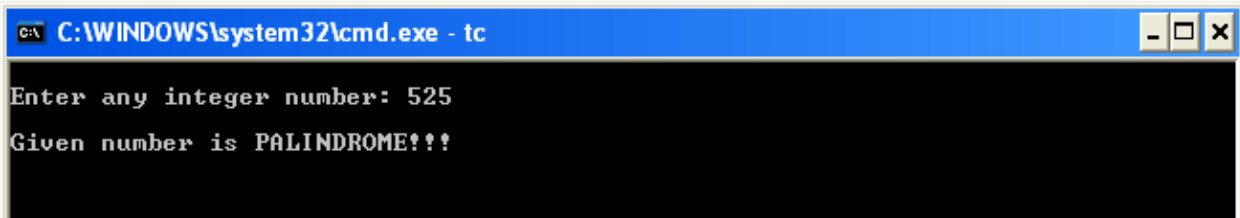
```
#include<stdio.h>
#include<conio.h>

void main()
{
    int num,reverse=0,remainder,temp;
    clrscr();

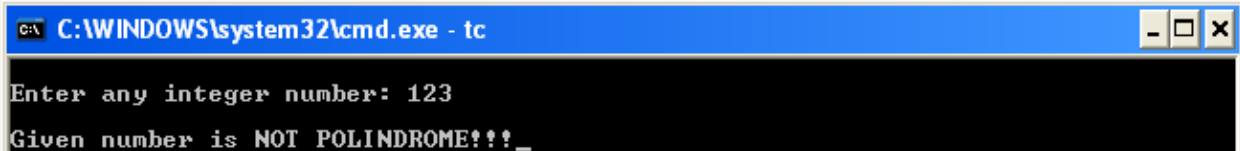
    printf("\nEnter any integer number: ");
    scanf("%d",&num);
    temp = num;

    while(num>0)
    {
        remainder = num % 10;
        reverse = reverse * 10 + remainder;
        num = num / 10;
    }
    if(temp == reverse)
        printf("\nGiven number is PALINDROME!!!");
    else
        printf("\nGiven number is NOT POLINDROME!!!");

    getch();
}
```



```
C:\WINDOWS\system32\cmd.exe - tc
Enter any integer number: 525
Given number is PALINDROME!!!
```



```
C:\WINDOWS\system32\cmd.exe - tc
Enter any integer number: 123
Given number is NOT POLINDROME!!!_
```

19. Write a C program to test whether given number is ARMSTRONG number or NOT.

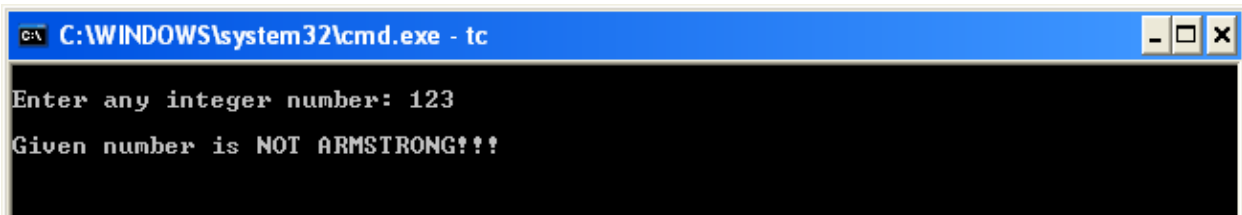
```
#include<stdio.h>
#include<conio.h>
#include<math.h>

void main()
{
    int num,sum=0,remainder,temp;
    clrscr();

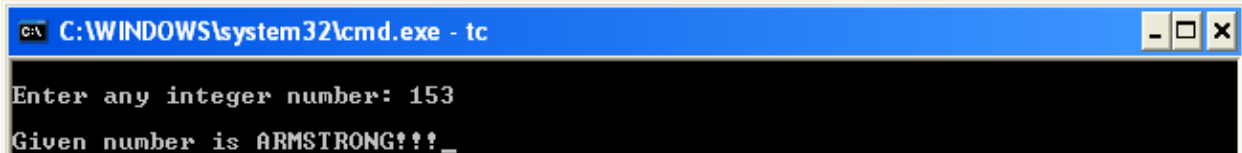
    printf("\nEnter any integer number: ");
    scanf("%d",&num);
    temp = num;

    while(num>0){
        remainder = num % 10;
        sum = sum + pow(remainder,3);
        num = num / 10;
    }
    if(temp == sum)
        printf("\nGiven number is ARMSTRONG!!!");
    else
        printf("\nGiven number is NOT ARMSTRONG!!!");

    getch();
}
```



```
C:\WINDOWS\system32\cmd.exe - tc
Enter any integer number: 123
Given number is NOT ARMSTRONG!!!
```



```
C:\WINDOWS\system32\cmd.exe - tc
Enter any integer number: 153
Given number is ARMSTRONG!!!_
```

20. Write a C program to perform Addition of two numbers using functions.

```
#include<stdio.h>
#include<conio.h>

void main()
{
    int num1,num2,result;
    int addition(int,int);
    clrscr();

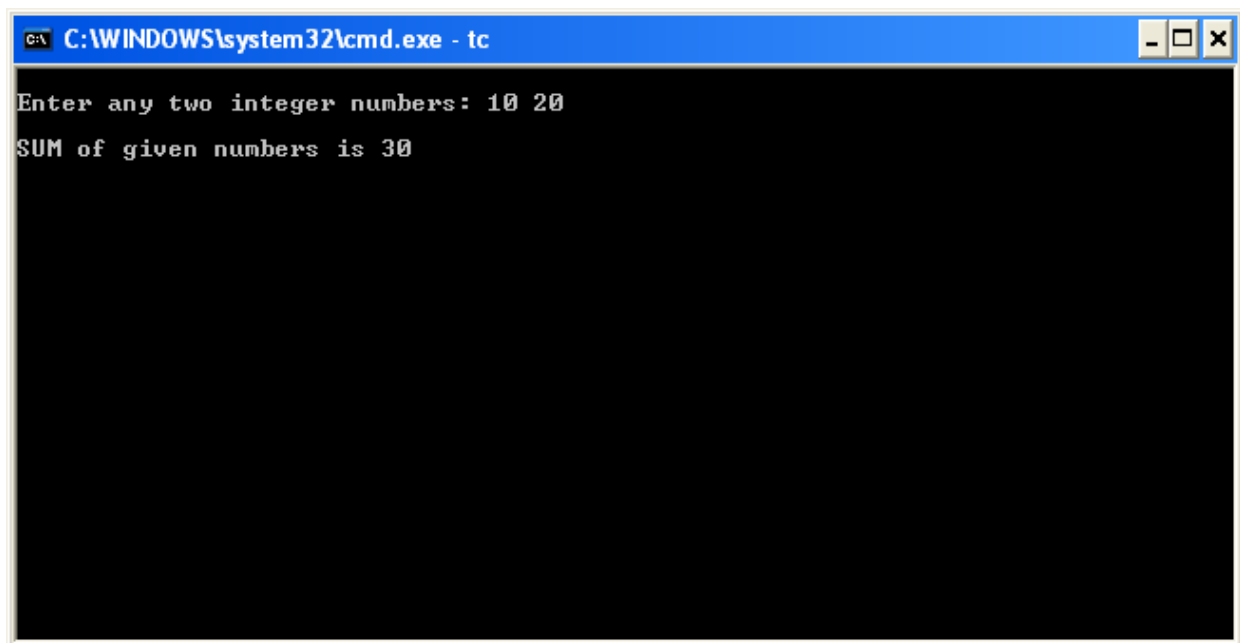
    printf("\nEnter any two integer numbers: ");
    scanf("%d%d",&num1,&num2);

    result = addition(num1,num2);

    printf("\nSUM of given numbers is %d",result);

    getch();
}

int addition(int a, int b)
{
    return(a+b);
}
```



```
C:\WINDOWS\system32\cmd.exe - tc
Enter any two integer numbers: 10 20
SUM of given numbers is 30
```

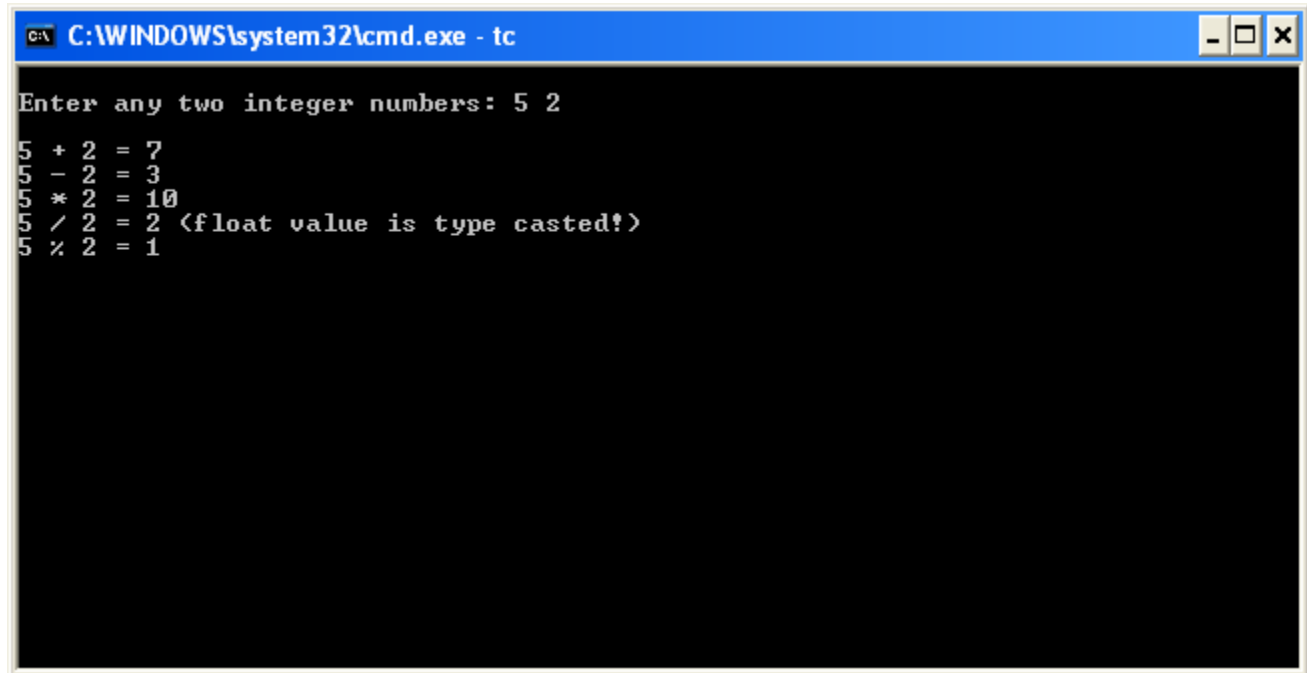
21. Write a C program to perform all Arithmetic operations using functions.

```
#include<stdio.h>
#include<conio.h>
void main()
{
    int num1,num2,result;
    int addition(int,int);
    int subtraction(int,int);
    int multiplication(int,int);
    int division(int,int);
    int modulo(int,int);
    clrscr();

    printf("\nEnter any two integer numbers: ");
    scanf("%d%d",&num1,&num2);

    printf("\n%d + %d = %d",num1,num2,addition(num1,num2));
    printf("\n%d - %d = %d",num1,num2,subtraction(num1,num2));
    printf("\n%d * %d = %d",num1,num2,multiplication(num1,num2));
    printf("\n%d / %d = %d (float value is type casted!)",num1,num2,division(num1,num2));
    printf("\n%d %% %d = %d",num1,num2,modulo(num1,num2));
    getch();
}

int addition(int a, int b){
    return(a+b);
}
int subtraction(int a, int b){
    return(a-b);
}
int multiplication(int a, int b){
    return(a*b);
}
int division(int a, int b){
    if(b == 0){
        printf("\nDivision is not posible!!!");
        return;
    }
    else
        return(a/b);
}
int modulo(int a, int b){
    return(a%b);
}
```



A screenshot of a Windows command prompt window. The title bar is blue and contains the text "C:\WINDOWS\system32\cmd.exe - tc" and standard window control buttons. The main area is black with white text. The text shows a prompt "Enter any two integer numbers: 5 2" followed by five lines of arithmetic operations: addition, subtraction, multiplication, division, and modulus. The division result includes a note about float casting.

```
C:\WINDOWS\system32\cmd.exe - tc
Enter any two integer numbers: 5 2
5 + 2 = 7
5 - 2 = 3
5 * 2 = 10
5 / 2 = 2 <float value is type casted!>
5 % 2 = 1
```

22. Write a C program to find SUM of individual digits of given integer number.

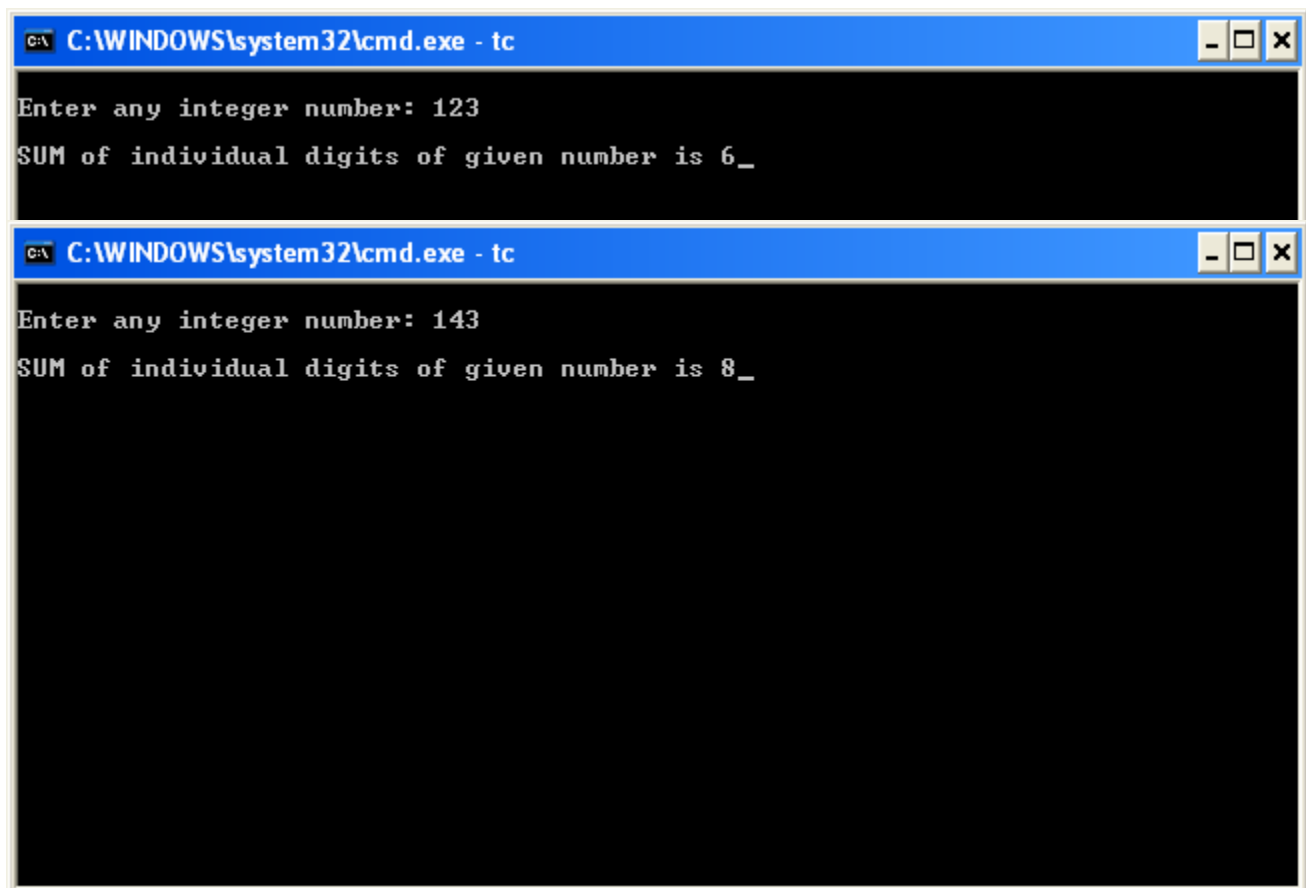
```
#include<stdio.h>
#include<conio.h>

void main()
{
    int num,sum=0,remainder;
    clrscr();

    printf("\nEnter any integer number: ");
    scanf("%d",&num);

    while(num>0)
    {
        remainder = num % 10;
        sum = sum + remainder;
        num = num / 10;
    }
    printf("\nSUM of individual digits of given number is %d",sum);

    getch();
}
```



The image displays two screenshots of a Windows command prompt window. The title bar of the window is blue and reads "C:\WINDOWS\system32\cmd.exe - tc". The first screenshot shows the prompt "Enter any integer number: 123" followed by the output "SUM of individual digits of given number is 6_". The second screenshot shows the prompt "Enter any integer number: 143" followed by the output "SUM of individual digits of given number is 8_".

23. Write a C program to perform all Arithmetic operations using 'switch' statement.

```

#include<stdio.h>
#include<conio.h>

void main()
{
    int num1,num2;
    char choice;
    clrscr();

    printf("\nEnter any two integer numbers: ");
    scanf("%d%d", &num1, &num2);

    printf("\nEnter operation symbol (+,-,*,/,%): ");
    choice = getch();

    switch(choice)
    {
        case '+': printf("\n%d + %d = %d",num1,num2,num1+num2); break;
        case '-': printf("\n%d - %d = %d",num1,num2,num1-num2); break;
        case '*': printf("\n%d * %d = %d",num1,num2,num1*num2); break;
        case '/': if(num2==0)
                    printf("\nDivision not posible!!!");
                else
                    printf("\n%d / %d = %d",num1, num2, num1/num2);
                break;
        case '%': printf("\n%d %% %d = %d",num1,num2,num1%num2); break;
        default: printf("\nWrong input!!!");
    }
    getch();
}

```

The image shows three sequential screenshots of a Windows command prompt window titled "C:\WINDOWS\system32\cmd.exe - tc".

- First screenshot:** The prompt "Enter any two integer numbers:" is followed by the input "10 20". The next prompt "Enter operation symbol (<+,-,*,/,%>):" is followed by the input "10 * 20 = 200_".
- Second screenshot:** The prompt "Enter any two integer numbers:" is followed by the input "5 2". The next prompt "Enter operation symbol (<+,-,*,/,%>):" is followed by the input "5 + 2 = ?".
- Third screenshot:** The prompt "Enter any two integer numbers:" is followed by the input "8 5". The next prompt "Enter operation symbol (<+,-,*,/,%>):" is followed by the input "8 % 5 = 3".

Write a C program to find GCD or HCF of given two integer numbers.

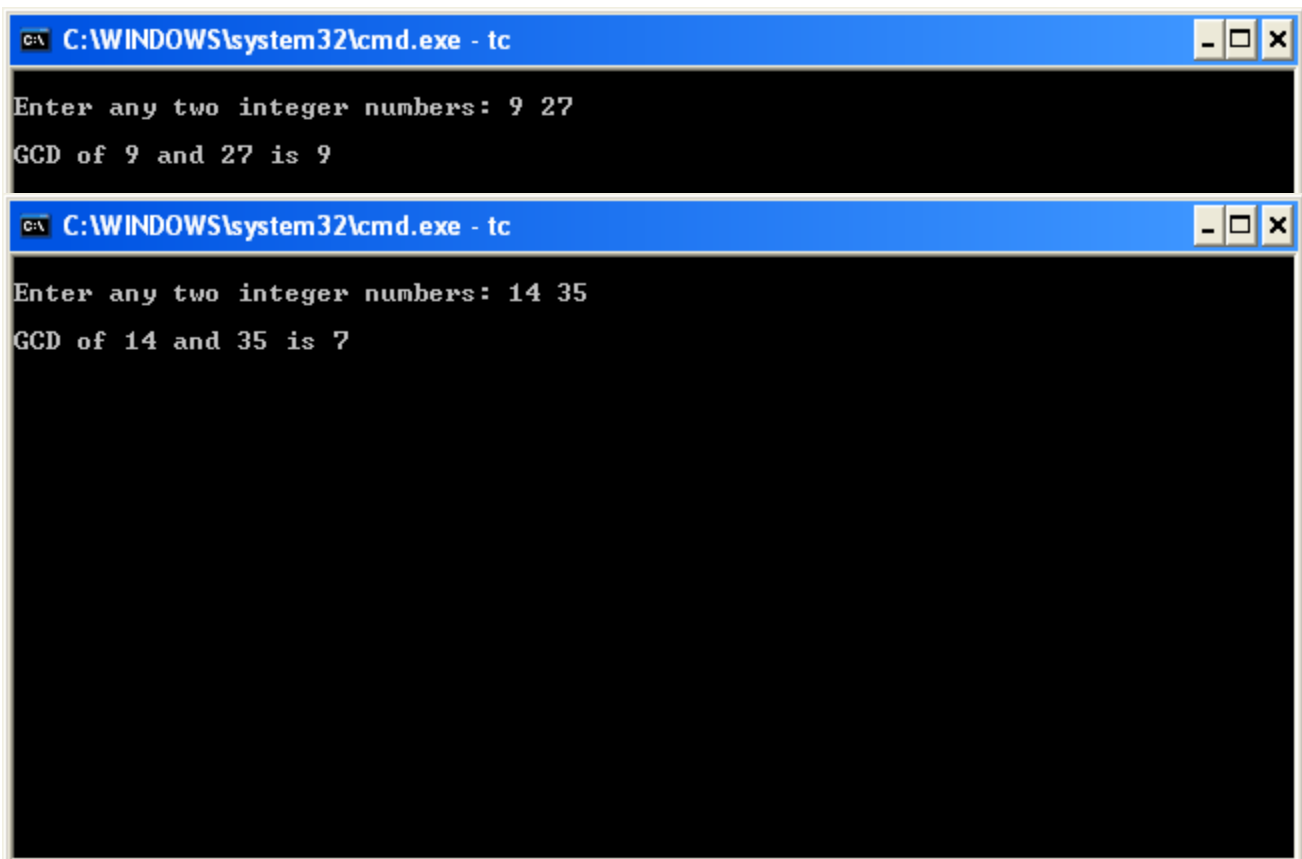
```
#include<stdio.h>
#include<conio.h>

void main()
{
    int num1,num2,temp=1,gcd;
    clrscr();

    printf("\nEnter any two integer numbers: ");
    scanf("%d%d",&num1,&num2);

    while(temp <= num1 || temp <= num2)
    {
        if(num1%temp == 0 && num2%temp == 0)
            gcd = temp;
        temp++;
    }
    printf("\nGCD of %d and %d is %d",num1,num2,gcd);

    getch();
}
```



The image shows two screenshots of a Windows command prompt window. The title bar of the window is blue and reads "C:\WINDOWS\system32\cmd.exe - tc". The first screenshot shows the program's output for the input numbers 9 and 27. The second screenshot shows the output for the input numbers 14 and 35.

```
C:\WINDOWS\system32\cmd.exe - tc
Enter any two integer numbers: 9 27
GCD of 9 and 27 is 9

C:\WINDOWS\system32\cmd.exe - tc
Enter any two integer numbers: 14 35
GCD of 14 and 35 is 7
```

24. Write a C program to calculate the following.

$$\text{Sum} = 1 - x^2/2! + x^4/4! - x^6/6! + x^8/8! - x^{10}/10!$$

```
#include<stdio.h>
#include<conio.h>
#include<math.h>

void main()
{
    int x,i=0,n=0;
    float sum=0;
    long fact(int);
    clrscr();

    printf("\nEnter the value of 'x': ");
    scanf("%d",&x);

    while(i<=10)
    {
        sum = sum+(pow(-1,n)*pow(x,i)/fact(i));
        i=i+2;
        n++;
    }
    printf("\nSUM = %ld",sum);

    getch();
}

long fact(int a)
{
    long f=1;
    while(a!=0){
        f = f*a;
        a--;
    }
    return f;
}
```

```
C:\WINDOWS\system32\cmd.exe - tc
Enter the value of 'x': 2
SUM = -2147483648
```

25. Write a C program to calculate the following.

$$s = ut + \frac{1}{2} at^2$$

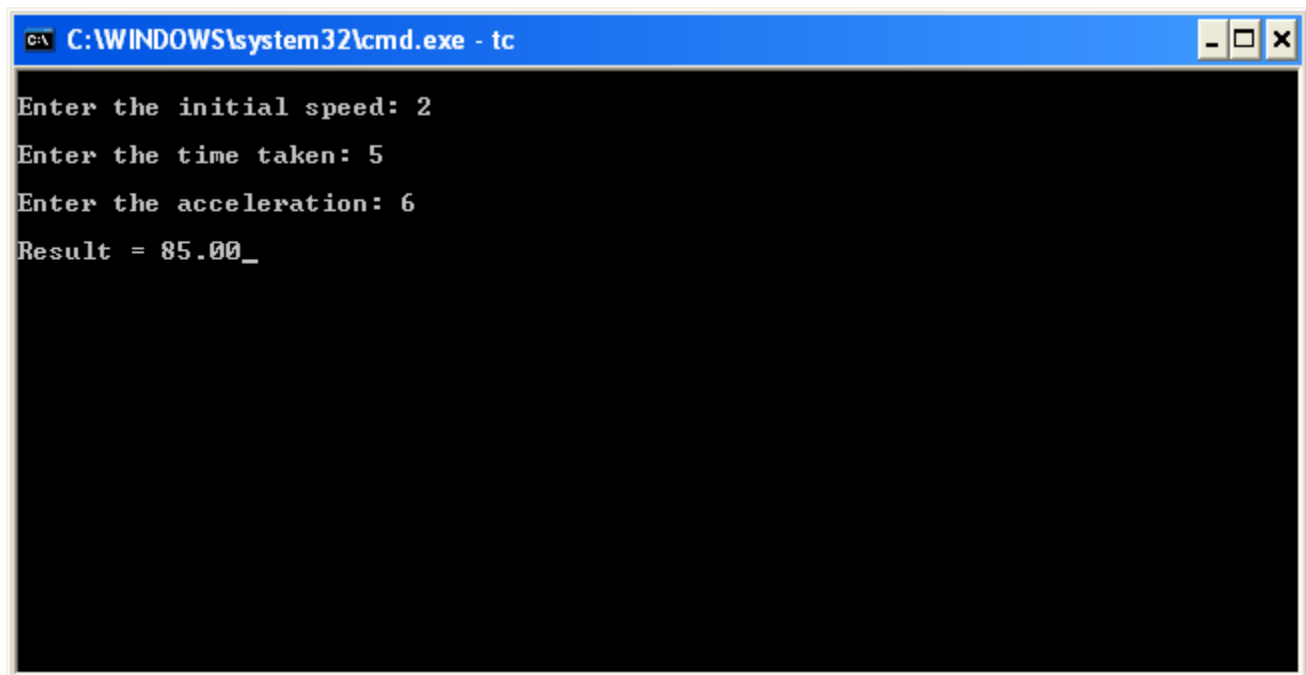
```
#include<stdio.h>
#include<conio.h>
#include<math.h>

void main()
{
    float u,t,s,a;
    clrscr();

    printf("\nEnter the initial speed: ");
    scanf("%f",&u);
    printf("\nEnter the time taken: ");
    scanf("%f",&t);
    printf("\nEnter the acceleration: ");
    scanf("%f",&a);

    s = (u*t) + (0.5)*a*pow(t,2);
    printf("\nResult = %.2f",s);

    getch();
}
```



```
C:\WINDOWS\system32\cmd.exe - tc

Enter the initial speed: 2
Enter the time taken: 5
Enter the acceleration: 6
Result = 85.00_
```