

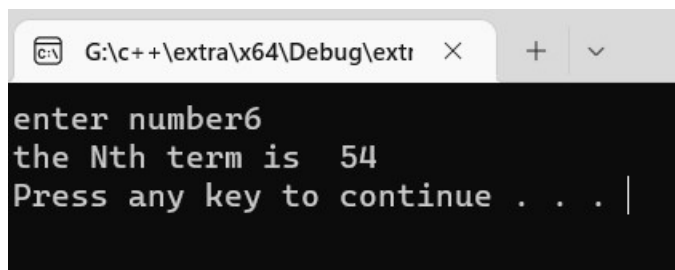
Task 1:

```
#include<iostream>
#include<cmath>
using namespace std;
int main()
{
    int N;
    cout << "enter number";
    cin >> N;
    if (N % 2 == 0)
    {
        N = (N * ((N / 2) + ((N % 2) * 2) + N));
    }

    else
    {
        N = (N * ((N / 2) + ((N % 2) * 2) + N));
    }
    cout << "the Nth term is " << N << endl;
    system("pause");
}
```

Or

```
#include<iostream>
using namespace std;
int sum(int N)
{
    return (N * ((N / 2) + ((N % 2) * 2) + N));
}
int main()
{
    int N;
    cout << "Enter a number: ";
    cin >> N;
    cout << sum(N);
    system("pause");
}
```



```
enter number6
the Nth term is 54
Press any key to continue . . . |
```

Task 2:

```
#include <iostream>
#include <cstdlib>
#include <ctime>
using namespace std;
int random()
{
```

```

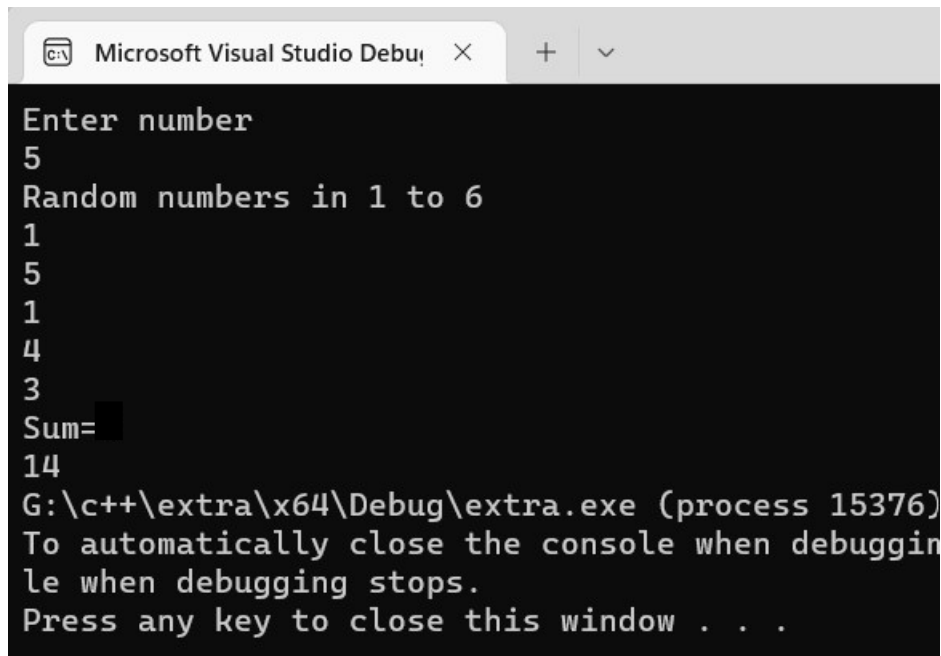
        return (rand() % 6) + 1;
    }
    int main()
    {
        srand(time(0));
        int num, i, n, sum = 0;
        cout << "Enter number " << endl;
        cin >> num;
        cout << "Random numbers in 1 to 6 \n";

        for (i = 1; i <= num; i++)
        {

            n = random();
            cout << n << endl;
            sum = sum + n;

        }
        cout << "Sum= " << endl << sum;
    }

```



```

Microsoft Visual Studio Debug Console
Enter number
5
Random numbers in 1 to 6
1
5
1
4
3
Sum=
14
G:\c++\extra\x64\Debug\extra.exe (process 15376)
To automatically close the console when debugging
le when debugging stops.
Press any key to close this window . . .

```

Task 3:

```

#include <iostream>
#include <cstdlib>
#include <ctime>
using namespace std;

void func()
{
    int num,n;
    num = (rand() % 1000) + 1;
    cout << num << endl;
    cout << "I have a number between 1 and 1000. \nCan you guess my number? \n Please type your
first guess.";
}

```

```

cin >> n;
while (n != num)
{
    if (n < num)
    {
        cout << "Too low. Try again."<<endl;
    }
    else if (n > num)
    {
        cout << "Too high. Try again."<<endl;
    }
    cout << "enter number  " << endl;
    cin >> n;
}

cout << "Excellent!You guessed the number!";

```

```

}
int main()
{
    srand(time(0));
    char ch;
    do
    {
        func();

        cout << "Would you like to play again(y or n) ?" << endl;
        cout << "enter y or n  ";
        cin >> ch;
        if (ch == 'n')
        {
            cout << "('-)";
            break;
        }
    } while (true);
}

```

```
Microsoft Visual Studio Debug Console
693
I have a number between 1 and 1000.
Can you guess my number?
Please type your first guess.693
Excellent!You guessed the number!Would you like to play again?
enter y or n y
582
I have a number between 1 and 1000.
Can you guess my number?
Please type your first guess.581
Too low. Try again.
enter number
2
Too low. Try again.
enter number
584
Too high. Try again.
enter number
582
Excellent!You guessed the number!Would you like to play again?
enter y or n n
(' ')
G:\c++\extra\x64\Debug\extra.exe (process 4868) exited with code 0
To automatically close the console when debugging stops,
press Ctrl+Shift+D or use the menu item "Debug Console ->
Auto Close Console When Debugging Stops".
Press any key to close this window . . .
```

or

```
#include <iostream>
#include <cstdlib>
#include <ctime>
using namespace std;
int main()
{
    int n,num;
    char ch;
    srand(time(0));
    n = (rand() % 1000) + 1;
    cout << n<<endl;
    cout << "I have a number between 1 and 1000.\nCan you guess my number?\n Please type
your first guess.\n ";
    cin >> num;
    while (num != n)
    {
        if (num < n)
        {
```

```

        cout << "Too low. Try again.\n";
    }
    else if (num > n)
    {
        cout << "Too high. Try again.\n";
    }
    cout << "enter number ";
    cin >> num;
}

while (num == n)
{
    cout << "Excellent! You guessed the number! Would you like to play again(y or n)
? \n";

    cout << "enter y or n ";
    cin >> ch;
    if (ch == 'n')
    {
        cout << "have a nice day.";
        break;
    }
    else if (ch == 'y')
    {
        srand(time(0));
        n = (rand() % 1000) + 1;
        cout << n << endl;
        cout << "enter number";
        cin >> num;
    }
}
}
}

```

Task 4:

```

#include <iostream>
using namespace std;
void swap(int &x, int &y)
{
    int n3=0;
    n3 = x;
    x = y;
    y = n3;
    cout << "number 1 is " << x << endl;
    cout << "number 2 is " << y << endl;
}

int main()
{
    int x, y;

```

```

        cout<< "enter number 1 ";
        cin >> x;
        cout << "enter number 2 ";
        cin >> y;
        swap(x, y);
        system("pause");
    }

```

Or

```

#include<iostream>
#include<cmath>
using namespace std;
void swap(int &x, int &y)
{
    int n3=0;
    n3 = x;
    x = y;
    y = n3;
}

int main()
{
    int x, y;
    cout<< "enter number 1 ";
    cin >> x;
    cout << "enter number 2 ";
    cin >> y;

    swap(x, y);

    cout << "number 1 is  " << x<<endl;
    cout << "number 2 is  " << y<<endl;
}

```

```

        system("pause");
    }
}

```

```

G:\c++\extra\x64\Debug\extr
enter number 1 100
enter number 2 500
number 1 is 500
number 2 is 100
Press any key to continue . . .

```

Task 5:

```

#include<iostream>
using namespace std;
void fac(int x)
{
    int fact=1;
    for (int i = 1; i <= x; i++)
    {
        if (x == 0)
        {
            fact = 1;
        }
        else
        {
            fact = fact * i;
        }
    }
    cout << "factorial is  " << fact<<endl;
}

int main()
{
    int x;
    cout<< "enter number 1 ";
    cin >> x;
    fac(x);
    system("pause");
}

```

```

G:\c++\extra\x64\Debug\extr
enter number 1 6
factorial is 720
Press any key to continue . . .

```