

Factorial of A Number

What is the factorial of a number?

- Factorial of a non-negative integer is the multiplication of all positive integers smaller than or equal to n. For example factorial of 6 is $6*5*4*3*2*1$ which is 720.
- A factorial is represented by a number and a "!" mark at the end. It is widely used in permutations and combinations to calculate the total possible outcomes. A French mathematician Christian Kramp firstly used the exclamation.

Program for factorial of a number

$$\begin{aligned}n! &= n * (n-1) * (n-2) * \dots * 1 \\4! &= 4*3*2*1 = 24 \\6! &= 6*5*4*3*2*1 = 720\end{aligned}$$



```
#include<iostream>
using namespace std;

int main()
{
    int n, ans = 1;
    cin >> n;
    while(n>0)
    {
        ans *= n;
        n--;
    }
    cout << ans;
    return 0;
}
```

INPUT :

7

OUTPUT :

5040