```cpp
#include<bits/stdc++.h>
using namespace std;
/*
    n C r = n! /( r! (n-r)! );

    5^C3 = 5C0 5C1 5C2 5C3 5C4 5C5

            pascale triangle
                  1
              1       1
            1     2    1
          1   3      3    1
        1     4     6     4     1

        4c0   4c1   4c2   4c3   4c0


*/
int fact(int n)
{
    if(n == 0)
        return 1;

    return fact(n-1) * n;
}

int c(int n, int r)
{
    int t1, t2, t3;

    t1 = fact(n);
    t2 = fact(r);
    t3 = fact(n-r);

    return t1/ (t2 * t3);


}

int C(int n, int r)
{
    if(r == 0 || n == r)
    {
        return 1;
    }
    else{
        return C(n-1, r-1) + C(n-1, r);
    }

}

int main()
{
```

```
54      int n, r;
55      n = 5;
56      r = 3;
57      cout << c(n, r) << endl;
58      cout << C(n, r) << endl;
59  }
```