Ahhh, I got you! Don't worry — we can go **super slowly**, no math fear here 😄. Let's break it down **step by step** with very simple numbers.

We want to see **why** this line:

```
cpp

ans = ans * (nRow - i) / i;
```

is just the combination formula in disguise.

1️⃣ Start with the combination formula

The combination formula is:

$$C(n, r) = \frac{n!}{r!(n-r)!}$$

This tells you: "How many ways can I choose `r` items from `n` items?"

2️⃣ Look at consecutive numbers in a row

Suppose we are in **row n = 4** (which is the 5th row in 1-based indexing):

$$C(4,0), C(4,1), C(4,2), C(4,3), C(4,4)$$

We know:

- $C(4,0) = 1$
- $C(4,1) = 4$
- $C(4,2) = 6$
- $C(4,3) = 4$
- $C(4,4) = 1$

Step 2a — Write formulas

$$C(4,1) = \frac{4!}{1! \cdot 3!} = \frac{24}{6} = 4$$

$$C(4,2) = \frac{4!}{2! \cdot 2!} = \frac{24}{4} = 6$$

$$C(4,3) = \frac{4!}{3! \cdot 1!} = \frac{24}{6} = 4$$

Step 2b — Notice a pattern

Let's try to get **C(4,1) from C(4,0)**:

$$C(4,0) = 1$$

$$C(4,1) = C(4,0) \times \frac{4-0}{1} = 1 \times \frac{4}{1} = 4$$

✅ Works!

Next, **C(4,2) from C(4,1)**:

$$C(4,2) = C(4,1) \times \frac{4-1}{2} = 4 \times \frac{3}{2} = 6$$

Next, **C(4,3) from C(4,2)**:

$$C(4,3) = C(4,2) \times \frac{4-2}{3} = 6 \times \frac{2}{3} = 4$$

Next, **C(4,4) from C(4,3)**:

$$C(4,4) = C(4,3) \times \frac{4-3}{4} = 4 \times \frac{1}{4} = 1$$

🎉 Works every time.

3️⃣ Connect to your code

In your code:

```cpp
ans = ans * (nRow - i) / i;
```

- `ans` → stores **previous combination**, i.e., C(n, r-1)
- `i` → is `r` in C(n,r)
- `nRow` → is **row length**, which is `n+1` (because the code counts 1-based)

So effectively:

$$C(n,r) = C(n,r-1) \times \frac{n-(r-1)}{r} = C(n,r-1) \times \frac{n-r+1}{r}$$

✅ That's exactly what the code does.
