A puzzler about an array of numbers

Form a triangle of numbers, with 1 at the apex, 1's down both sides, and each number in the middle being the sum of the two numbers above it (above left and above right):

```
          1
        1   1
       1  2  1
     1  3  3  1
    1  4  6  4  1
   1 5 10 10 5 1
 1 6 15 20 15 6 1
```

What do these numbers have to do with what we are talking about today?

ANSWER: This is *Pascal's triangle*, and in encodes all the combination numbers. Counting the apex of the triangle as Row 0, and counting along each row starting from 0, the kth number in the nth row is $\binom{n}{k}$. For example, the "20" in the middle of the bottom row above is $\binom{6}{3}$. See https://en.wikipedia.org/wiki/Pascal's_triangle