

The Binomial Theorem using Pascal's Triangle

For any binomial $a + b$ and any natural number n ,

$$(a + b)^n = c_0 a^n b^0 + c_1 a^{n-1} b^1 + c_2 a^{n-2} b^2 + \dots + c_{n-1} a^1 b^{n-1} + c_n a^0 b^n$$

where the numbers $c_0, c_1, c_2, \dots, c_{n-1}, c_n$ are from the $(n+1)$ st row of Pascal's triangle.