

## Fermats

$$x^c + y^c = z^c$$

$$= (x + y)^{c-1} \sum_{k=0}^{c-1} \binom{c-1}{k} x^k y^{c-1-k}$$

Where the coefficients are the 1/x root of each of the c numbers...

## Beals...

$$x^c + y^c = z^c$$

$$= (x + y)^c (1 - y)^{c-1} \sum_{k=0}^{c-1} \binom{c-1}{k} x^k y^{c-1-k}$$

Again... the coefficients of the cth root are only addable to the number c so they cannot multiply to make the number of the c

Where “ $\sum_{k=0}^{c-1} \binom{c-1}{k}$ ”

“ means one less than the right hand formula of the binomial coefficient formula below.. (c-1 k)

### Definition and interpretations [\[edit\]](#)

For **natural numbers** (taken to include 0)  $n$  and  $k$ , the binomial coefficient expansion of  $(1 + X)^n$ . The same coefficient also occurs (if  $k \leq n$ ) in the [bi](#)

$$(x + y)^n = \sum_{k=0}^n \binom{n}{k} x^{n-k} y^k$$

(valid for any elements  $x, y$  of a [commutative ring](#)), which explains the name. Another occurrence of this number is in combinatorics, where it gives the number of  $n$  objects, more formally, the number of  $k$ -element subsets (equal to the one of the first definition, independently of any of the formulae; one temporarily labels the term  $X$  with an index  $i$  (running from 1 to  $n$ ), th