

# 01204211 Discrete Mathematics

## Lecture 13: Binomial Coefficients

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# The binomial coefficients

There is a reason why the term  $\binom{n}{k}$  is called the binomial coefficients. In this lecture, we will discuss

- ▶ the Pascal's triangle,
- ▶ the binomial theorem, and
- ▶ advanced counting with binomial coefficients.

# The equation

Last time we proved that, for  $n, k > 0$ ,

$$\binom{n}{k} = \binom{n-1}{k-1} + \binom{n-1}{k}.$$