Chapter 6.4
Wednesday, Week 5

Warmup

What is the combinatorial reasoning? $\binom{n}{k} = \binom{n}{n-k}$

Evaluate:

1. $\binom{4}{3}$
2. $\binom{6}{3}$
3. $\binom{17}{0}$
4. $\binom{12}{2}$
5. $\binom{6}{8}$
6. $\binom{895}{895}$

IT'S PASCAL'S TRIANGLE EVERYONE!!! FILL IN THE NEXT TWO ROWS OF PASCAL'S TRIANGLE!!

$$
\begin{array}{ccccccccccc}
 & & & & & 1 & & & & & \\
 & & & & 1 & & 1 & & & & \\
 & & & 1 & & 2 & & 1 & & & \\
 & & 1 & & 3 & & 3 & & 1 & & \\
 & 1 & & 4 & & 6 & & 4 & & 1 & \\
\end{array}
$$

(More) Combinatorial Proofs

You have $n+1$ friends and one of them is Freddy. How many ways to choose k friends for a Frisbee team if one of them is Freddy?

How many ways to choose k friends for your Frisbee team if none of them are Freddy?

The Binomial Theorem

Recall: According to the Binomial Theorem, what is the x^2 coefficient in $(1+x)^4$?

What is $(1-1)^5$?

The Multinomial Theorem

What are the xy^2 and xyz coefficients of $(x+y+z)^3$?

How many distinct arrangements of the letters in MISSISSIPPI?