Last name _____

First name _____

LARSON—MATH 550—CLASSROOM WORKSHEET 20
Pascal's Triangle.

Concepts & Notation

- Sec. 5.1. Binomial coefficients, Pascal's triangle.

1. Draw several level's of Pascal's Triangle.

Let $\binom{n}{m}$ be the number of m-subsets of an n-set.

2. Find $\binom{3}{1}$.

3. Find $\binom{3}{2}$.

4. Find $\binom{n}{1}$.

5. Find $\binom{n}{n-1}$.

6. How should we define $\binom{n}{0}$?

7. Find a formula for $\binom{n}{m}$ $(0 \leq m \leq n,\ m, n \in \mathbb{Z})$.

8. Can you *prove* it?

9. Draw 5 levels of a Pascal-style triangle where the 0^{th} (top) level is the single number $\binom{0}{0}$, and where the n^{th} level is the $(n+1)$ numbers $\binom{n}{0}, \binom{n}{1}, \ldots \binom{n}{n}$.

10. What would you need to show in order to *prove* that this triangle is the same as Pascal's triangle?