General Announcements

- Pick up Quiz 1 in my office hours; Quiz 1 solutions are posted on the course website
- Quiz 1 average: 82.24 (out of 100)
- Homework 5 due by 11:59PM Tuesday 3/6
- Our Midterm Exam will be Wednesday 3/7 (6:00-7:50PM in DCC 308)
- Homework solutions are posted and will be reviewed in recitation (bring grading questions/grievances to your recitation TA during his/her office hours)
- Please check (refresh/reload) the weekly schedule before attending office hours; rooms may change

Product Rule

With 5 runners, how many top-3 finishes?

\[ 5 \times 4 \times 3 = 60 \]

With 3 runners, how many top-3 finishes?

\[ 3 \times 2 \times 1 = 6 \]

With 100 runners, how many top-3 finishes?

\[ 100 \times 99 \times 98 = 970,200 \]

Build-Up Counting

The special case \( \binom{0}{0} \) is equal to 1.

King-Queen Positions on a Chessboard

For this problem, the goal is to determine how many different ways we can place a king and queen on a chessboard such that the pieces occupy different columns and rows.

What if the pieces cannot occupy the same column, row, or diagonals?

Castle-Castle Positions on a Chessboard

Okay...really these are rooks!

For this problem, the goal is to determine how many different ways we can place two rooks on a chessboard such that the pieces occupy different columns and rows.