MTH 231 Lecture 17

Ex. Problems

8-digit uppercase word

→ Repetition OK

26^8

→ No rep

$= 26 \cdot 25 \cdot 24 \cdots 19$

$= \prod_{K=0}^{7} (26-K) = \frac{26!}{18!}$

Arrange feat. Repetition

- $\frac{n!}{n_1! \cdots n_r!}$

Ex: $\{a,b,c,c\} = \frac{4!}{2!}$

Subtraction Rule

- If there are m or n ways to complete a task from start to finish and a of the ways are redundant, then there are m+n-a unique ways to complete the task

Ex: How many bit strings of length 10 have 0 in all even blanks, or a 1 in all odd blanks

0 in all even: 2^5 1 in odd: 2^5

Arranging

- How many ~~ways~~ to arrange n distinct items? n!

Ex how many ways to arrange $\underbrace{\{a,b,c\}}_{3} = 3!$