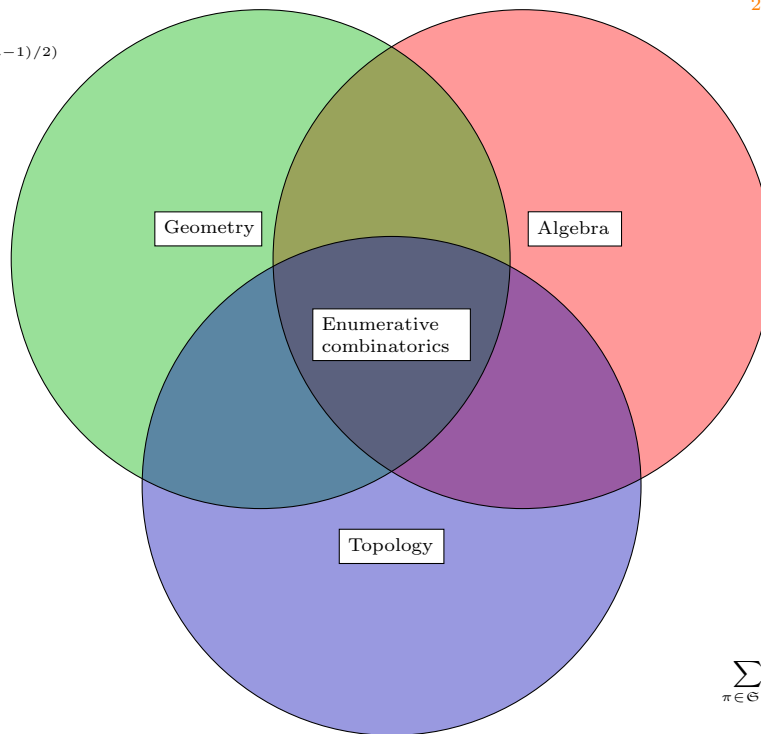
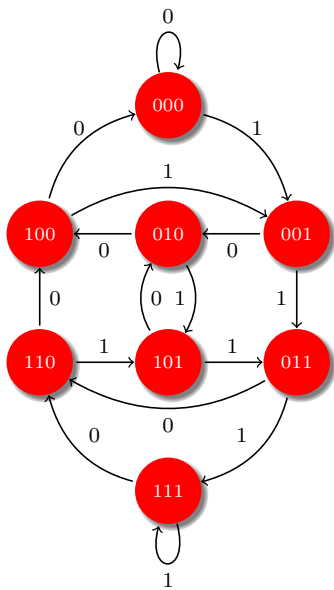


$$\prod_{k \in \mathbb{Z}} (1 - x^k) = \sum_{n \geq 0} (-1)^n x^{n(3n-1)/2}$$



$$\sum_{\pi \in \mathfrak{S}_n} q^{\text{inv } \pi} = \prod_{k=1}^{n-1} \sum_{i=0}^{k-1} q^i$$

Class: MAT 514-Enumerative Combinatorics
 Time: TTh 12-1:15 (Flexible! We may change this if we find a time we all like)
 Text: *Enumerative Combinatorics I&II* by Richard P. Stanley
 Instructor: Susanna Fishel
 We'll focus on two themes— various structures and counting techniques that are useful in many situations and various situations where counting problems arise.

Some topics

- (1) Classic counting-permutation statistics, generating functions, set and integer partitions, etc.
- (2) Posets-properties, generalizations of inclusion-exclusion, applications to geometry, algebra, topology