Preview of L10: (#P & ASP)

$NP = \{ \text{decision problems with poly-time certificates} \}$

$NP$ search problem = find a solution (if any)
- at least as hard as decision problem

Counting version $\#X$ of $NP$ search problem $X$:
- compute how many solutions
  - at least as hard as decision problem (0 vs. >0)
  - $\#X$ (or $X$) is $\#P$-hard if $\#X$ is at least as hard as all such problems ($\#P$)

Another Solution Problem: ASP $X$ = given an instance & one solution, is there another?
- negation of “is this solution unique?”
- $X$ is ASP-hard $\implies$ ASP $X$ is NP-hard

\text{Parsimonious} = 1-monious
- for $\#P$- & ASP-hardness

C-monious reduction from $A$ to $B$ if
- $\#$ solutions to $B = C \cdot \#$ solutions to $A$
- for $\#P$-hardness
Coauthor tips:
- use message titles (for TOC)
- delete blank messages
- delete makes message invisible to others (except staff)
- unpublish does the same
- minimize makes message default-folded (only title visible, click + to expand)

- @mentioning is local to message ~ replies/attachments need them repeated (for solved problems)

- edit old messages to flesh out details
- emoji responses
- drag messages in TOC to reparent

- list of Markdown & LaTeX features
- Github issues

Documentation link at bottom