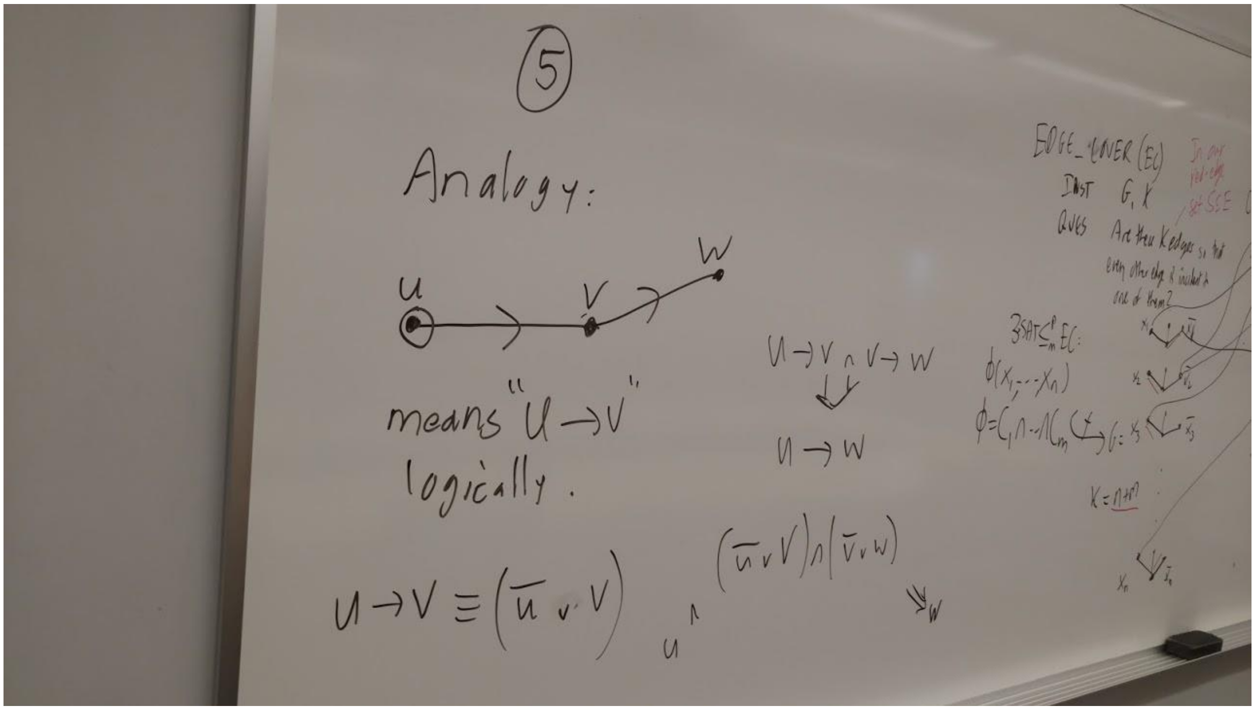
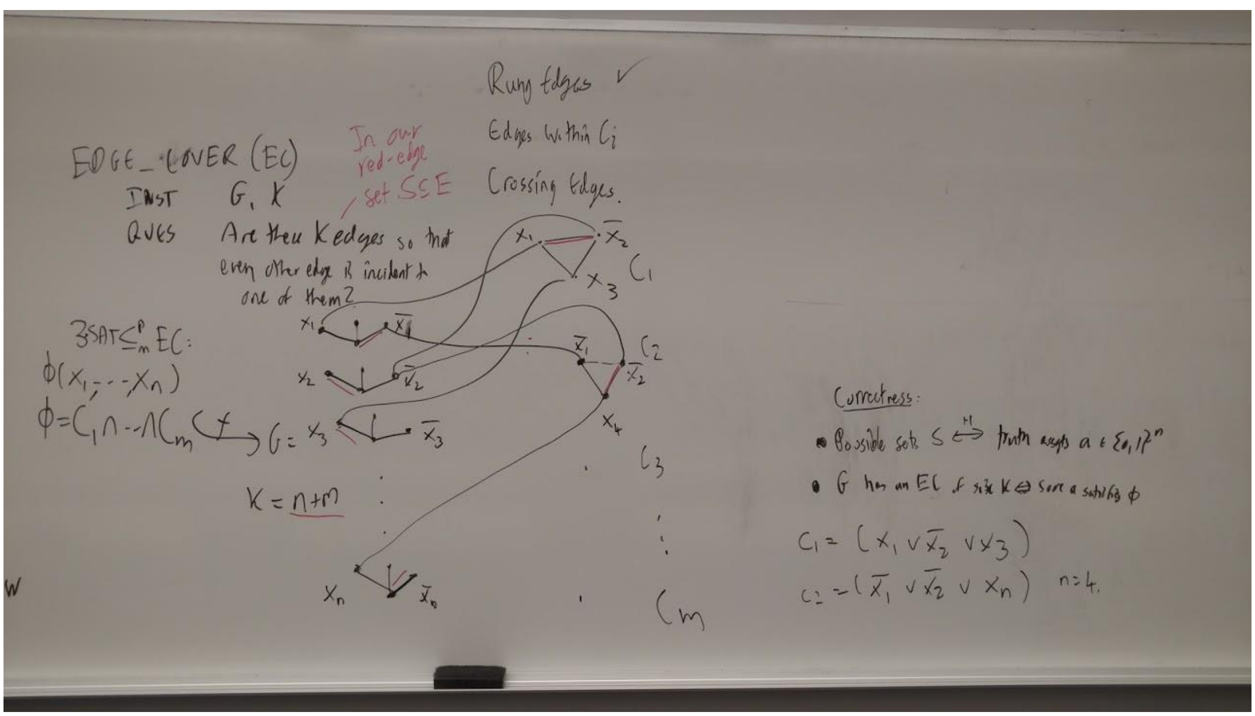
CSE596 Q&A, Tue. Nov. 19, 2019

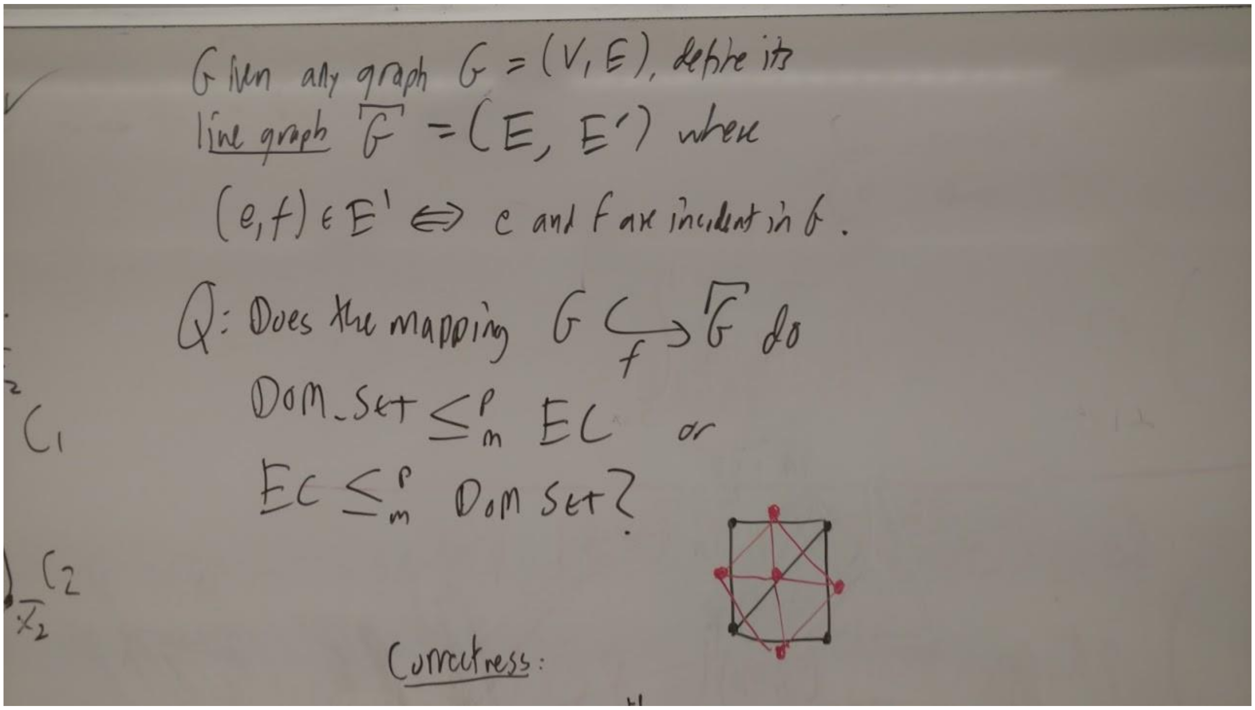
Problems 5 and 1 were the main questions. I did an example of using the “rungs and clause gadgets” architecture to reduce 3SAT to another an NP-complete problem.





The single picture doesn’t show how I unfolded the logic of the reduction by first designing the rungs to offer a choice between the left edge for setting x_i = true or the right-hand edge for x_i = false.

Here was a followup question aimed at getting reductions in the right direction:



The answer is the latter, because this f makes edges (black) ***become*** vertices (red). The last bit was a fact relevant to problem 4: if two classes have different *closure properties*, then we know they cannot be equal, even though we may not be able to prove that neither contains the other.