

Today NP completeness. §§ 34.{1,2,3}.

Next class More NP completeness. §§ 34.*

Reminders *Midterm exam date change*. Newsgroup. Homework. Posters and portfolios.

1. List the members of your group below. Underline your name.

2. Recall, from Homework 4, the problem of listing all 3-tuples of pole-lengths that satisfy the straight-line requirement described there. Define this problem formally as an *abstract problem*, using the textbook's conventions (p. 1054). Provide a small illustrative *instance* of this problem.

3. Describe a suitable *encoding* of the objects used in your definition for Question 2. Use this encoding to map the instance of Question 2 to a *concrete problem*.

4. Define a suitable *decision problem* corresponding to the problem of Question 2.

Provide the decision-problem instance corresponding to the instance of Question 2, in both abstract and concrete forms.

5. Is the problem of Question 4 in P? Is it in NP? Is it NP-complete? Explain your answers briefly.

6. Recast the problem of Question 4 using *formal languages*.