Problem Set 10 — Due Wednesday, June 3, 10:45 am

Note the unusual day for this (minimal) assignment being due.

**Problem 1.** Let SAT20 = \{⟨φ⟩ : φ has at least twenty different satisfying assignments\}. Show that SAT20 is NP-complete.

**Problem 2.** A graph \(G = (V, E)\) is said to be \(k\)-colorable if there is a way to paint its vertices using colors in \{1, 2, \ldots, k\} such that no adjacent vertices are painted the same color. Let G3C denote the language of encodings of 3-colorable graphs. Let G4C denote the language of encodings of 4-colorable graphs. The language G3C is NP-Complete. (We will prove this on Monday.) Use this to prove that G4C is NP-Complete, too.