IDS 101 Doing Mathematics

Today

1. Writing proofs
   (a) Every claim must have a reason.
   (b) As with other forms of writing, be aware of your audience.
   (c) Grammar, spelling, and punctuation do matter.
   (d) **Writing is rewriting.** (Hemingway, paraphrased.)
2. Example from our problems. What does it look like to prove a statement?
3. **Definition:** Call a coloring of a graph G a **clique-choice** coloring (cc-coloring) if it obeys the following rules:
   (a) If vertices belong to a clique of size 3 or greater, they are either all different colors or all the same color; and
   (b) otherwise, adjacent vertices are different colors as in a proper coloring.

   The **clique-choice chromatic number** of a graph G is the smallest number of colors for a which a valid cc-coloring exists, denoted $\chi_c(G)$.

Problems

1. What did you discover about graphs?
2. Now ask and try to answer some questions about the clique-choice chromatic number. Make some graphs and try to cc-color them.

Homework: Write up a proof of some claim and bring it next time for critique.