Intro to Proofs Day 3 Outline (This class meets for 1 hour and 50 minutes.)

**Need cards, 2.1/2.2 worksheets, proof portfolio problems 1 and 2, quizzes, CHROMEBOOK**

**Present Synthesis Activities** [0-20 minutes] (Volunteers present)

* Section 1.1 Exercise 10: (a) Powers of 4 are 4, 16, 64, 256, 1024, 4096 – Conjecture: all powers of 4 have a 1’s digit that is 4 or 6. (b) 7^n – 2^n is 5, 45, 335, 2385, 16775. Conjecture: All of these have 1’s digit 5. For derivatives 2e^(2x), 4e^(2x), 8e^(2x). Conjecture: If n is a natural number then f^(n)(e^2x) = 2^n e^(2x).
  + Discuss writing conjectures. Don’t know if these are true!
* If m is an even integer then 3m^2 + 2m + 3 is an odd integer.
  + Assume m is even. Then 3(2x)^2 + 2(2x)+3 = 12x^2+4x+3 = 2(6x^2 +2x+1)+1. Since 6x^2+2x+1 is an integer, odd.
  + Use this time to discuss writing guidelines. (GO OVER PA2 #1)

**Section 2.1** [20-50 minutes]

* Brief discussion of truth tables (PA1 #3) with “or”. Only false when both are false.
* They construct the truth tables and do biconditional statements, check with their groups.
* Work on pages 2 and 3 as well.
* Bring back together as needed.

---------------------------------BREAK ---------------------------------------------------

**LaTeX stuff** [60-90 minutes]

* Have everyone open LaTeX and download/upload the proof portfolio template from Blackboard.
* See Overleaf

**Quiz!** [90-110 minutes]

***Next time:*** Logical equivalence notecards.

For next time: SA3: Section 1.2 #2a and type, Section 2.1 #2, PA3 (2.2/2.3)