Intro to Proofs Day 14 Outline (This class meets for 1 hour and 50 minutes.)

**Need 4.1 worksheets, synthesis to hand back, snacks/pens/cards**

**Synthesis Activity** [0-10 minutes]

* Discuss as a class the proof of 3 on the 3.4/3.5 (For every integer n, n^2+n+8 is even.) Ask what their questions are on proving/writing.
* Section 3.4 #7 – For each integer n, if n is odd then 8|n^2-1
  + What cases and why?
  + Do one case.

**Preview Activity Proof Evaluations** [15-30 minutes]

* Slide 7:
  + Lots of people said the proof is correct, but needs more definitions to be made clear. But there is actually one thing that makes the proof not right! Find it?
* Slide 8:
  + The proof is wrong. (Explain why. Lots of people said “need proof by contradiction” – rapidly spreading disease.)
  + The proposition is false.
  + If a proposition is false you cannot prove it (not with contradiction or any other type of proof)
* Slide 9:
  + There’s a HUGE IMPORTANT MISTAKE IN THIS ONE
  + Mention how to talk about closure. Closure of A SET under an OPERATION

**Section 3.4/3.5 worksheet** [30-50 minutes]

* They work on Theorems 2,3,4 (4 if time).

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

**Discuss Preview Activity [60-70]**

* Use screenshots
* Also do page 1 of the 4.1 worksheet

**Do example [70-80]**

* The sum of the first n odd integers is n^2
* Sigma notation?

**Section 4.1 Worksheet [80-95]**

* Write down the steps for the next 2 problems, don’t worry about doing them yet!

**Quiz [95-110 minutes]**

For next time:

Synthesis #13: Section 3.3 #20c on page 130, Section 3.4 - Progress Check 3.21 (just an outline is fine), Section 4.1 #3a on page 180, just write down the steps

No PA, work on proof portfolio.