Intro to Proofs Day 2 Outline (This class meets for 1 hour and 50 minutes.)

**Need cards, notecards with logical equivalencies, writing guidelines (pink), writing guidelines checklist (pink), skill quizzes description (green), 1.2 and 2.2/2.2 worksheets**

**Syllabus Discussion** [0-10 minutes]

* *Questions from Preview Activity:*
  + Will we ever switch groups? (YES!)
  + Will explain the proof portfolio when we get to it.
  + How difficult is this class compared to other math courses? (Hard to say?)
  + On collaboration – think over a problem on your own for a little bit first
  + How many questions will be on the quizzes and exams? Also, do you drop any of the lowest scores? (Quizzes will be 1-4 questions, but you don’t always have to do them all (HAND OUT QUIZ THING NOW). Lowest scores are not dropped (except for Preview Activities – you can miss two).
  + Point out worksheets and solutions are posted on Blackboard
* *Quiz Discussion*
  + These are 15 basic things you should be able to do at the end of this class. You’ll have 3 attempts to show me that you can do it, and once you show me you don’t have to show me again. The standard is high, it’s either completely correct or you have to try again.
  + You can use tokens to get a 4th attempt on a skill.
  + The first quiz is Monday and has only skill L1
* *Group Norms*
  + On slide

**Present Synthesis Activities** [10-20 minutes]

* Exercise 3: (a) If 10<7 then 3-4 (TRUE), (b) If 7<10 then 3=4 (FALSE), (c) If 10<7 then 3+5 = 8 (TRUE), (d) If 7<10 then 3+5 =8.
* Exercise 7 (a)-(c): If f is a quadratic function of the usual form and ac<0 then the function f has two x-intercepts:
  + (a) g(x) = -8x^2 +5x-2. Note that (-8)\*(-2)=16>0 so nothing concluded
  + (b) h(x) = -1/3 x^2 + 3x. Note that (-1/3)\*0 = 0 which is not less than 0 so nothing concluded
  + © k(x) = 8x^2-5x-7. Note that (8)(-7)=-56<0 so the theorem can be applied and the function has 2 x-intercepts

**Closure** [20-35 minutes]

* Hand out WS while they discuss
* Go over PA (Yes, No, Yes) – most right. Question 3: If two rational numbers are subtracted then the result is a rational number. Whenever the hypothesis is true the conclusion is true. (This is mostly how we’ll prove things, because the only thing we want to avoid is having the hypothesis be true and the conclusion be false).
* They read and do page 1, compare answers when you are ready.

**Even – Odd Proofs** [35-45 minutes]

* Go over PA of even and odd. Want to emphasize that the thing you are multiplying by has to be an integer! Wu response. Pascal response. E.g., -7 is an even integer because -7=2(-3.5)??
* Do Know-show table for Theorem 1 together
  + Write what you know at the top and what you want to show at the bottom.
  + Work forwards and backwards (asking forwards questions – what can I do next? And backwards questions – what comes before this step?)

**Writing Guidelines** [45-60 minutes]

* Hand out writing guidelines and check list, they do page 3

TAKE A BREAK (10 minutes)

**Type 0,1,2 integers** [70-95 minutes]

* 6 minutes to read and think to yourself. Do an example or two.
* 14 minutes to talk it out and try to prove it.
* Have someone present?

**Truth Tables** [95-110 minutes]

* Everyone got P or Q correct
* Try to fill in truth tables for each of the things with logic. I’ll check in.
* Work through pages 1-2 with your group.