Richard Rodriguez
CTTI Geometry Workshop
Notes #5, 12/15/12

[start—9:10]

Intro: Recap of "N-secting" a line
-Recap of workshop up to this point
-Intro for understanding area, units

Goal: prove sidesplitter theorem (use area and multiplication of segments)

Numbers vs. Lengths
-ratios of lengths are not numbers. They are different objects
    -define operations (+,X) on lengths by equivalence classes of congruence

[left room: appx. 10 min for copying]

Field axioms
-Properties of operations

-Point of proof: reduce memory load by understanding how things fit together
    -cf. example of distressed precalc students trying to memorize individual facts

Activity/handout: Cyclic Quadrilateral Theorem
-recap of side-length multiplication

[10:20]
-discussion of work, more work; some difficulties with getting the correct diagram

-First, make plausible choices for operational definitions => then, ask whether it mattered.

[11:00]
Area and Equal Content
-different from scissors congruence
-discussion of assumed Area properties (cf. CME book)
-Want: function that will assign area

Activity/handout—Massaging a Picture

[lunch]

[12:45]

(continue previous activity)

-connecting area to congruence. Goal: why area = base*height

-discussion of solution to problem
-discussion of how to extend area discussion from grade school level to high school level

Activity/handout—Triangle Base & Height

[1:45]

Activity/Handout--Proving the Sidesplitter

Discussion of definitions of length and angle measure in CCSSM

Activity/handout—Garfield's proof of Pythagorean thm