

Rubric Assignment 11: due Nov. 19

John T. Baldwin

November 26, 2007

Rubric-Geometry to Algebra

The assignment was to correct the argument for the distributive law as assigned in HW 9 (due Nov 5).

I am revising the rubric that was used for the first assignment. A number of people got much closer but stumbled at the same point: see 4) below. A number of people did not turn it in. I will accept a late paper as this is a very important topic.

This is the grading rubric for the assignment due Nov. 5. It is Homework 9 on the website.

The problem gave a definition of ‘multiplication’ \otimes and ‘addition’ \oplus of equivalence classes of line segments. The assignment was to prove that \oplus is commutative, \otimes is associative, and \otimes distributes over \oplus . There were no numbers in the problem; no numbers should appear anywhere in the proof.

The following rubric categorizes the response. For almost all students, one category applies to the paper as whole. A few students did markedly different work on different problems and this is reflected in the marking. A major difficulty for a few people was lack of words. Proofs are written in English. Diagrams can illustrate but not replace a proof.

1. There was no indication of understanding the roles of algebra and geometry in the problem.
2. The response partially uses geometric arguments but eventually falls into thinking that length has been defined and one can manipulate numbers.
3. The geometric idea is understood pretty well but there are technical problems in the proof or it is not properly explained.
4. In carrying out the geometrical argument, there is an unnecessary (and incorrect) appeal to the notion of proportionality for numbers. In this framework, this notion has not been defined. But the rest of the argument is correct.
5. The geometrical arguments are carried out to solve the problem.

Nov. 26. A score of 1-5 was recorded for the problem on the distributive law. Those who had it correct the first time were given credit again.

Nov. 12: I have recorded these scores not as part of your grade but to tell me where the class is. I did however as part of the grade record those people who made a good faith effort.