MATH 311/510 HOMEWORK–7 DUE AT THE BEGINNING OF CLASS ON TUESDAY, OCTOBER 19.

(1) There is no observation write-up due this week.

(2) Read Wu’s article in the Educator.

(3) An elementary education major, in a course analogous to MAE 301/501, might study several different models for subtraction. In class, using manipulatives to study integer subtraction, I used the “take-away” model. In this model, the expression $5 - 2$ is interpreted as “the number left when we take 2 away from 5.”

Sam suggested a method using the “missing-addend” or “linear” model. In this model, the expression $5 - 2$ is interpreted as “the number added to 2 that yields 5.”

(a) Figure out how we could use manipulatives to study integer subtraction via this missing addend model. Carefully write out your ideas; include diagrams where appropriate. Be sure to include every possible combination of positive and negative terms among your examples.

(b) Write a paragraph or two explaining how your method could help students gain a more conceptual understanding of subtraction of integers. If you see serious flaws in your method, or in the method discussed in class, write about this as well.

(c) Write a few paragraphs comparing and contrasting our work with manipulatives to Wu’s discussion of integer multiplication. Describe any mathematical and pedagogical strengths and weaknesses to each approach.

(4) Carefully read the articles:

