THE REAL WORLD

MAT 322-01, FALL 2012

1. What is to be done

Some of the "word problems" one finds in textbooks are really apalling. One recent book describes the situation in this way:

> Instead of giving students realistic situations that they could analyze, textbook authors began to fill books with make-believe contexts — contexts that students were meant to believe but for which they should not use any of their real-world knowledge. Students are frequently asked to work on questions involving, for example, the price of food and clothes, the distribution of pizza, the numbers of people who can fit into an elevator, and the speeds of trains as they rush toward each other, but they are not meant to use any of their actual knowledge of clothing prices, people, or trains. Indeed, if they do engage in the questions and use their real-world knowledge, they will fail. Students come to know this about math class. They know that they are entering a realm in which common sense and real-world knowledge are not needed.[1]

So your assignment is to create and justify a *really* real-world problem in the area of algebra or algebraic thinking. You should write the problem, give a rubric for its assessment, and state to what objective (aligned to Illinois Learning Standards in math) it applies.

By saying that it should be a "*really* real-world problem," I mean the opposite of the filth the quote above describes. Your problem should come directly from some situation that at least 10% of your students are legitimately likely to encounter in their lives, the solution to the problem should be legitimately necessary to the situation, and any prior knowledge that students have about the situation should *help* and should certainly *not hinder* them in solving the problem. You should give a brief explanation of how your problem meets these requirements.

In short then, you are to deliver the following:

(1) The problem itself,
(2) The rubric for its assessment, and
(3) Pedagogical data on the objectives related to the problem and the veracity of the problem to the students' lived experience.

2. Due Date

The paper should be turned in on or before October 18.

3. Grading

In addition to the usual criteria, I will assess the following content questions:

(1) Is the problem true to the lived experience of at least 10% of the students (i.e. Can those students reasonably be expected to encounter the depicted situation? Is solution of the problem reasonably necessary in the situation?)? Does prior knowledge of the real world help, and not hinder, the students?
(2) Is the problem appropriately aligned with learning standards in algebra and algebraic thinking? Does the rubric accurately assess mastery of those standards?

[1] J. Boaler, *What's Math Got to Do with It?*, Viking, 2008.