The High School Math Curriculum: why I think it’s broke and what is my favorite fix

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Abstract: Over the past few years I have been putting increasingly more of my research time into mathematics curriculum development in grades 9-12. Lately I have even tried to begin doing serious research in mathematics education and I find it a sea change from theoretical biology. I take mathematics to be (by definition) the abstract study of structure. Thus the problems (or activities) I construct for my students are structurally rich and everything they do is aimed at exploring and understanding the structure. This task has both a logical and an aesthetic dimension and as we all know, those two worlds interact in powerful ways. This Fall I have a number of teachers in different cities working in their classrooms with some of the problems on my website www.math912.ca and my objective is to gather feedback from their experience. I will talk about the ideas that inform my research approach.