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Streamlining Basic Algebra Instruction.

A first course in basic algebra is, for many, a significant emotional experience. Given this, it does no good to encourage students to believe the material is more difficult than they already think it is. All too often this is precisely what happens, and I place much of the blame on the textbook industry. In subject after subject, textbook presentation is unnecessarily Balkanized into topics, subtopics, and sub-subtopics. For example, discussion of graphing linear equations in two variables often involves lines with positive slope and lines with negative slope, lines that pass through the origin and lines that don't, vertical lines, and horizontal lines, all in spite of the fact that, given their treatment in a developmental algebra class, only vertical and non-vertical lines warrant different treatment. This is in no way unique, as can be seen with textbook accounts of, among other things, linear equations in one variable, multiplying polynomials, and factoring quadratic expressions. To best maximize chances for student success, it is imperative that material be presented in an accessible, coherent, unified way, not as a mish-mash of techniques applicable in narrowly defined circumstances. I will address ways of doing just that. (Received August 04, 2011)