

PHYS 6110: Math. Methods of Theoretical Physics I



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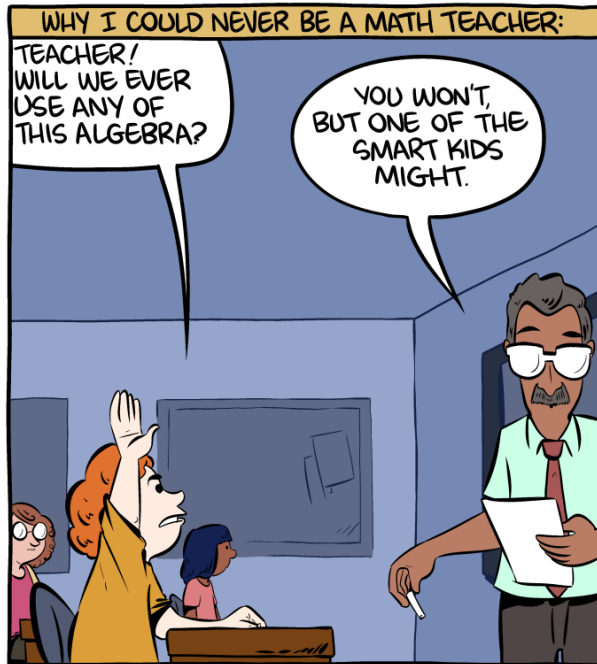
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1. Motivation

Or: Wise Words

References: []

(a) A Conversation You Never Had About Math



(b) Math in Physics is More Than Rote Application

Understanding whether the result **makes sense**—or deciding whether the method is the right one to use in the first place—requires a **guiding human hand**. [...]

A math course that fails to do so is essentially training the student to be a very slow, buggy version of Microsoft Excel. [...]

When doing any **serious mathematical thinking**, you're going to have to multiply 6 by 8 sometimes, and **if you have to reach for your calculator** each time you do that, you'll never achieve the kind of **mental flow that actual thinking requires**. **You can't write a sonnet if you have to look up the spelling of each word as you go.**

[J. Ellenberg: *How Not to Be Wrong*, p. 56 f.]

