

Teaching Summary

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Most students who think themselves bad at math are, in my experience, merely intimidated by it; my goal as a professor is to replace this uncertainty with confidence.

As one step toward this goal, I encourage my students to ask questions without apology. What is obvious to one student may be unclear to another, and from the first day of courses I make clear that no sincere question is too “stupid” or trivial. Some students prove the Pythagorean Theorem in geometry or the law of cosines in precalculus. Others can apply them, but not prove them. Others still are decades removed from the high school math they hardly remember. But all three, I believe, can be taught.

In lower-level courses, there is a canonical but artificial line between application and proof. Since mathematics is the science of critical thought, I view this distinction as largely meaningless and meant to be blurred. While some proofs are indeed better left to high-level courses, a basic outline of a theorem’s proof both aids in its memorization and gives it satisfactory context. Students who know *why* $(fg)' = f'g + fg' \neq f'g'$ tend to remember that fact more consistently than those for whom its appearance on a formula sheet is proof enough.

But to convey these benefits, I must first convince students to come to class. Since this choice is theirs to make, it must be a sensible one; during its scheduled block, my course must be the most profitable use of their time. In particular, *my students must stand to gain more by participating in my classroom than they would by spending the same amount of time reading the textbook.* With intellectual atrophy more attainable and easily disguised as true mastery than ever before, I must strive to be more than an expensive audio textbook; my teaching must have a human touch that Web resources can supplement but not replace. No PDF of course notes should clarify what my office hours do not, and no YouTube tutorial should better simplify what I have overcomplicated.

To teach mathematics is to lift burdens, to pique curiosity, to tackle weaknesses, to reveal and buttress strengths. It is a deep joy and extreme privilege.