

Teaching (and Grading) with MathXpert

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MathXpert is software (that I wrote) for learning algebra, precalculus, and calculus. It is designed to replace blackboards and paper homework, but not teachers and books. You can use MathXpert in class to support your existing lecture style. Now you can also use it to automatically grade homework.

MathXpert contains a symbolic computation program that is able to solve all (I hope) symbolic problems in algebra, precalculus, and (one-variable) calculus courses. (Thus Math 32 is not covered, but all prior math courses are; and it also supports differential equations graphically.) It uses that capability to assist students in producing their own step-by-step solutions. It can give hints, suggest the next step, carry out the next step, or even finish the whole solution automatically.

Last summer I wrote a new program, WebGrades, that works with MathXpert. Students enrolled in WebGrades get an option when they complete a problem in MathXpert to submit their solution. These solutions are recorded and a grade is automatically computed. At any time the students can view the grades on the Web, where they are automatically posted by secret number. At the end of the semester, you cut and paste them from the web into your grade spreadsheet.

MathXpert with WebGrades is thus a direct competitor to WebAssign and other online grading systems. These systems were reviewed last year in the *Notices of the AMS* (before WebGrades existed); the reviewer faulted them all for not allowing students to show their steps. That is MathXpert's strong point.

At this talk I will show you how easy it is, and what a pleasure it is, to teach using MathXpert; and I will also show you why the students like to do their homework with MathXpert and WebGrades, and how it simplifies your teaching by solving the homework-grading problem once and for all. I will answer any questions you may have.

I wrote MathXpert in the 1990's and it has been in use since 1997. In 2004 I recovered the intellectual property rights and since then I have been selling it at www.HelpWithMath.com, where you can find out more about it and download a free trial copy.