

- **EMTeachline Mathematics**
- **Fourier Nova 5000**

# PRODUCT reviews

## EMTeachline Mathematics Software

By David K. Pugalee  
and Margaret Adams

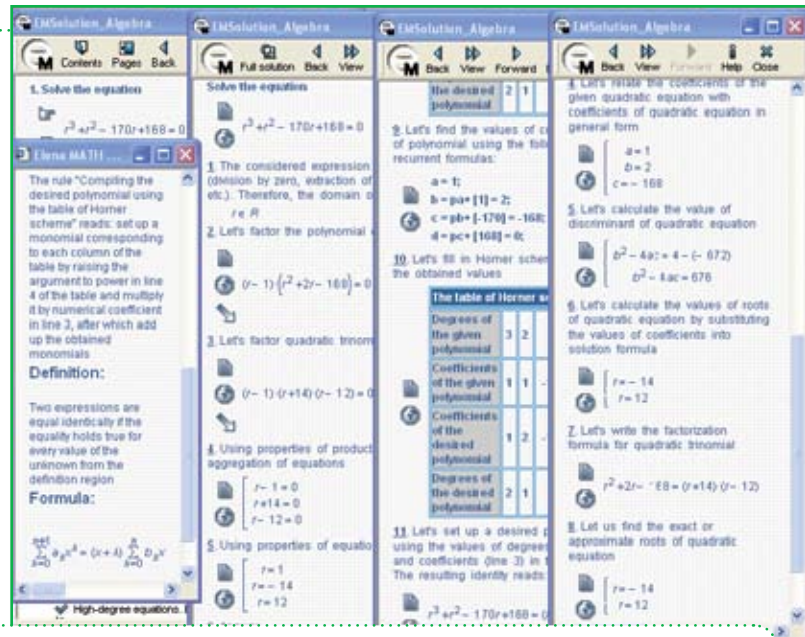
EMTeachline is a software company specializing in educational products, including mathematics software focusing on arithmetic, pre-algebra, algebra I, algebra II, trigonometry, and hyperbolic trigonometry with a database of nearly 5 million math examples with 11 levels of problem complexity from basic through advanced.

The mathematics software modules are intended for school-age students, math teachers, and others who are interested in solving math problems. The software is a learning and teaching tool for students, math teachers, and tutors working with all ages and skill levels. It supports both English and German interfaces. There are three primary program lines available with different options available to the user. EMTask is a math test preparation program allowing the user to develop tests, variant tests, quizzes, exams, and homework on a variety of topics at multiple levels of complexity. EMSolution is a problem solving software that expands problem solutions step by step, including objective, grounding definition, rule, and math formula. This program also includes all options of EMTask. EMMentor is an interactive program focusing on problem-drilling skills. The program provides guidance in solving math problems, evaluates performance, finds errors, and generates exercises for correcting them. It includes all

options of EMSolution and EMTask. Descriptions of programs and trial versions can be found at the company's Web site.

The program provides an extensive database of mathematics problems, allowing users to select a topic and one of 11 levels of complexity. Teachers can arrange problems from the database by topic, complexity level, solution method, and type of task. The problems are challenging and demonstrate the application of the steps necessary to arrive at a correct solution to the mathematics problem. The presentation of the problem solving process step by step is perhaps the greatest strength of the program. The performance analysis and the ability for students to work at their own pace are positive features of the program, making it appealing for individual as well as classroom applications.

Overall, the software provides very detailed components within each category of topics and subtopics. For example, the Solution Mentor offers detailed definitions of mathematical terms and operations; however, this information may be somewhat difficult for users to apply in understanding the solution process for the problems. Though the program provides a differentiated avenue for developing concrete skills in solving mathematical problems, the interface did not provide for easy navigation through a particular problem with information in language that is easily accessible to many users, particularly students who are struggling with understanding mathematical concepts and procedures. Although the problems are not overly complex for the topics covered, the language used to develop a theoretical base for the execution of pro-



Each problem is solved step by step, with the in-depth substantiation of each step.

cedures is very technical. The use of technical mathematical notation and symbols may also pose problems.

Although the developers state that the programs are geared for a wide audience, from elementary to secondary students as well as teachers, the level of presentation raises questions about the appropriateness of the software for some student audiences. It should be noted, however, that the comprehensive body of mathematical language is very good, and the logical and consistent use of the language throughout the program is remarkable. Yet the software would be very limited as a source for remediation for middle or secondary-level students, or for typical undergraduate students needing help in math courses. The technical nature of the language and the symbolic level of definitions and formulas would likely be problematic for many students without careful

teacher support. There is a student audience for this type of program, but students would need to understand technical mathematical language and symbol use. Many would find the detailed step-by-step development of solutions a helpful guide in building and developing procedural problem solving skills. Teachers would find the program to provide a useful database of mathematics problems.

Pricing for the EMMentor ranges from €350 (\$415) for the trigonometry module to €157 (\$170) for the algebra proof inequities module. EMTask modules range from €23–€64 (\$27–\$76).

**EMTeachline Mathematics**

Pentium 2 or higher  
64 MB RAM  
Windows 98 or higher  
Internet Explorer 5.5 or higher  
EMTeachline  
<http://www.EMTeachline.com>



David Pugalee is an associate professor at the University of North Carolina Charlotte. His research focuses on communication in mathematics including the role of language in mathematics teaching and learning. He is currently serving as interim director of the Center for Mathematics, Science & Technology Education at UNC Charlotte.



Margaret Adams is a doctoral student in curriculum and instruction at The University of North Carolina at Charlotte, concentrating in mathematics education. She holds a Master of Arts Degree in Experimental Psychology from Brooklyn College, The City University of New York, and a Bachelor of Arts Degree in Psychology from Pace University.

## Fourier Nova 5000

By J.V. Bolkan

The Nova 5000, a hybrid tablet PC, is positioned as a cross between a full-sized tablet notebook computer and a handheld device. Built by Fourier, a well-established name in probeware systems for education, the Nova 5000 has a strong science base. My testing unit (the 5000EX model) came with a temperature probe and a light sensor.

However, the Nova 5000 is much more than a handheld probe base. A bright and sharp touch-sensitive 7" color screen displays the familiar Windows CE Desktop. The stylus works well enough, but neither the handwriting recognition or the virtual keyboard is satisfying when it comes time to work with most common computer tasks such as word processing, e-mail, or presentations. Fortu-

nately, Fourier has loaded the Nova 5000 with a bevy of ports, including ones for keyboard, VGA video, headphones/speakers, microphone, Ethernet, a CF expansion RAM slot, three USB, and four standard probe I/O ports. The device also has a small, functional speaker. In fact, I wrote this review on the device using a standard keyboard and a USB mouse while attached to my network through the supplied USB wireless device.

The software includes SoftMaker's TextMaker word processing and PlanMaker spreadsheet applications. Of course, Fourier includes a solid collection of science and math applications, including MultiLab probeware and Portrait 4 math graphing and visualization. It has Windows Media Player, viewers for PowerPoint and PDF installed, as well as some basic Windows games, e-mail, Internet Explorer, Wordpad, and other utilities.



Attractive, even cute, the Nova 5000 is a seriously capable slate-style pen-based computer loaded with educational possibilities.

Fourier obviously understands how equipment should work in the classroom (and out on field trips). The device is rugged, solid, yet neither too bulky nor heavy for younger students to tote. Bright textured plastic grips on either side, although not as grippy as rubber, do add a friendly appearance to the pleasantly rounded body. Overall, the device is somewhat smaller than most textbooks, and about the

*Reviews continues on page 45.*

*Reviews continued from page 42.*

same weight. It does have integrated “legs” so that students can have it sit at approximately a 45-degree angle for easy viewing on a desktop, but they don’t have quite the solid feel of the rest of the machine. Additionally, the included Wireless G USB device seems to jut from the side of the Nova 5000 when installed. A broken support leg wouldn’t be a major problem, but for a device meant to be carried everywhere by students, it’s too bad the wireless capabilities couldn’t have been built into the case.

Aside from pure specifications, some of the biggest classroom advantages of the Nova 5000 come from its power management capabilities. Windows CE, devised for handhelds, is an extremely efficient operating

system. It can exist in minimal RAM, enabling a system such as the Nova 5000 to use battery-friendly RAM rather than a hard disk. Even with the relatively large screen Fourier claims the oversized 7.2 volt battery can power the system for a full school day. I found that even intensive use with two probes, a keyboard, mouse, and the wireless card active, the battery lasted beyond three hours. Because the OS is burnt into ROM, and all data is stored in static RAM, the machine boots in seconds and instantly resumes whatever work was last in process. This should help save battery life. Additionally, this feature will make it easier for teachers to decide to have students begin class segments on the computer. The near instant startup removes the disruption that the forced

wait for standard computer boot ups can cause.

Overall, at approximately \$500, the Nova 5000 is a wonderful device for education. Compromises don’t always work, but Fourier has done an admirable job of combining enough of the power of a laptop or desktop computer with the efficiencies and affordability of a handheld to truly succeed in the classroom.

**Fourier Systems, Inc.**

Nova 5000

1.877.266.4066

<http://www.fourier-sys.com>



*J.V. Bolkan is the senior editor for L&L. He’s been writing hardware and software reviews for more than 20 years.*