# New Assessment Software for Math Education Now in Pilot Testing

# Technology from Waterloo Maple aims to reduce the cost and effort of giving exams

Waterloo, Canada, February 5, 2003 - Waterloo Maple, the leading provider of advanced mathematics software for research and education, announces an initiative to offer fully automated assessment software for mathematics education. The new Web-based assessment software aims to eliminate the cost, effort and limitations of paper-and-pencil testing. Called Maple T.A.<sup>TM</sup>, the software will enable instructors to create online math tests, assignments and practice sessions that are graded by the same intelligent software engine that drives Maple® 8, recognized as the most sophisticated system for advanced mathematics computation. Waterloo Maple is now soliciting participation in pilot testing of Maple T.A. Schools wishing to pilot Maple T.A. can contact <a href="mailto:bizdev@maplesoft.com">bizdev@maplesoft.com</a>.

A student takes a test created with Maple T.A. through a standard Web browser. The student can enter responses either by clicking buttons on a palette of math symbols or by typing them into a text box using calculator-like syntax. A Maple engine running on the Maple T.A. server grades the test automatically as soon as the student submits it.

Maple T.A. can automatically grade symbolic, as well as numeric answers. This means instructors can include free-form questions like: "Give an example of a prime number greater than 6," or "Find the union of the sets {a, b, c} and {b, d, e, f}". Because the grading is automatic, a school using Maple T.A. would no longer be limited to multiple-choice tests, even if there are hundreds of students in the class.

Instructors can also randomize questions, so that every student would see a slightly different version of each question. During a homework assignment created with Maple T.A., a student could repeat a slight variation of an exercise as many times as he or she wanted and get instant feedback every time.

Freshman placement testing at colleges and universities promises to be an area of great impact for Maple T.A. With traditional hand-written placement exams, the arrival of thousands of freshmen students at a university campus proves to be a great challenge for the mathematics faculty. In several auditoriums across campus, dozens of proctors administer a paper-and-pencil placement test to the freshmen that decides which math course they should take. At great expense, the department will have printed thousands of paper copies of the test. Faculty may have spent hours creating multiple versions of the test to hinder cheating. After the test, staff will have to run thousands of multiple-choice answer sheets through a scanner. Even after all this effort and cost, faculty members worry whether a multiple-choice exam assesses students' abilities fairly.

Using Maple T.A. to create, administer and grade the placement test would resolve all of these issues. Incoming freshmen could take the test over the Web from home before they even arrived on campus. The school would save printing costs and staff time spent on proctoring and grading. Faculty would be free to ask free-form questions that much better assess a student's knowledge than multiple-choice, without incurring any extra grading time.

Questions about Maple T.A. or proposals to pilot the software may be directed to bizdev@maplesoft.com.

### **About Maple T.A.**

Maple T.A. provides schools with a complete infrastructure for creating, administering and grading free-form, online mathematics exams and assignments. Maple T.A. grades assignments with the Maple engine, the most trusted software for exploring mathematics and developing mathematical applications. Maple T.A. frees schools from the cost, effort and limitations of traditional paper-and-pencil assessment. It allows easy randomization of questions in order to hinder cheating and encourage repetition of exercises. It also lets instructors include free-form mathematics questions on assignments, even when there are thousands of students in the class.

#### **About Maple 8**

Maple 8 delivers a comprehensive environment for visualizing and exploring mathematical concepts and developing mathematical applications. Combined with free add-on packages at MaplePrimes<sup>TM</sup> (www.mapleprimes.com) and hundreds of applications at the Maple Application Center<sup>TM</sup> (www.mapleapps.com), Maple 8 is the most flexible analytical tool for professors, researchers, scientists, engineers and students. Maple 8's technical features include the most advanced suite of mathematical solvers, intelligent symbolic algorithms for all areas of mathematics, Maplets for GUI customization, scientific visualization, a powerful programming language, and connectivity to the Web, Microsoft® Excel, MATLAB®, and external C, Fortran and Java<sup>TM</sup> programs.

## **About Waterloo Maple**

Founded in 1988, Waterloo Maple is a world leader in mathematical and analytical software. Its suite of products include Maple 8, the standard among interactive mathematical software, MapleNet™ a comprehensive mathematical infrastructure for the Web, and MapleT.A., a system for automated grading of mathematics tests. Maple products embody advanced technology such as symbolic computation, infinite precision numerics, innovative Web components, extensible user-interface technology, and an unrivalled suite of mathematical algorithms for intelligent management of complex mathematics. Over 5 million users benefit from advanced Maple technology. Virtually every major university and research institute in the world, including MIT, Stanford, Oxford and Waterloo, has adopted Maple products to enhance their education and research activities. Waterloo Maple's industrial customer base includes Boeing, Bosch, Canon, and NASA. For more information visit http://www.maplesoft.com.

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**News Release**