

EMTeachline Mathematics Software

(Software review)

Reviewer:

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Product details:	
Product Name:	EMTeachline Mathematics Software
Product Category:	School/Polytechnic/University software Education/Mathematics/Software/Teaching/Learning
Developer/Publisher:	EMTeachline Software
Website	http://www.emteachline.com
Product Price:	Purchasing is via the online web site. eMTeachline provides a repository of over a million math problems. These are grouped into programs and there are many options available. As an example a module on arithmetic will cost 113 Euro for the tasks and 186 Euro for the tasks and solutions, and consists of over 35,000 problems.
Contact:	Dr Marina Chabalova contact@emteachline.com
Snapshot review:	Rating out of 5
Ease of use	2.5
Ease of navigation	2.5
Documentation	3
Price/value ratio	- (dependant on usage and application)
Pedagogical foundation	3
Instructional values	3
Interactivity	2

Brief product overview

- EMTeachline's web site describes EMSoftware as comprising millions of math problems in arithmetic, algebra, pre-calculus, trigonometry and hyperbolic trigonometry. Hundreds of general and special solution methods. Fully explained step by step solutions of equations, inequalities and more. Math formulas proofs. Authoring tools to create math tests, exams and problem-solving lesson plans. Multilingual and XML-MathML support.
- Products include;
 - EMTask is a task-book comprising thousands of problems with answers.
 - EMSolution will provide detailed step-by-step solutions to each problem. EMMentor allows variants of tests to be created (this was not provided for review), and
 - EMFormula teaches formulae and their "verbal formulations" (also not provided for review).
- System requirements
 - Windows 3.1/95 or higher
 - 486 DX or higher (Pentium recommended)
 - 8 MB RAM (16 MB recommended)
- Installation
 - The evaluation copy submitted for review (Emsolutionlight.exe) was a 3MB self-extracting file archive. According to the author " The evaluation program EMSolutionLight is a fully functional analog of commercial programs and covers the whole range of topics developed by EMTeachline".
 - Installation is by default to C:\Program Files\EMTeachline\EMLight

- Installing uses about 10.4MB on disk. No icon was created on the desktop, but an entry was made in the start bar programs. No run instructions were given at end of installation (which would be useful), but the folder containing the extracted files was opened.
- There does not appear to be any Registry settings (which is a nice change!)
- Installation was on a P4 2.4GHz running Win XP Pro (with Service Pack 2).
- De-installation
 - Although a program UnInstallEM.exe existed, running it had no effect, somehow this deleted itself later. But, as there appears to be no files external to the EMLight folder merely deleting the files in this folder seemed to delete the application from the system.

Using the system

- On starting the system a "quote" splash screen was displayed then the screen illustrated by figure 1.

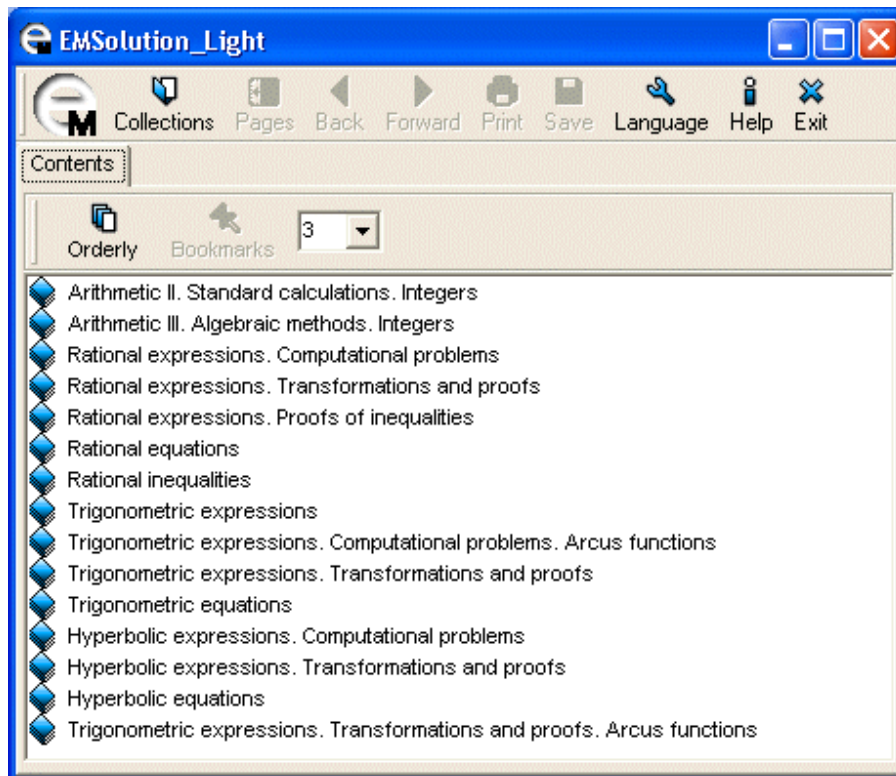


Figure 1. Initial screen

- On selecting Arithmetic II (the first option) then Perform operations, the expanded version was displayed (figure 2)

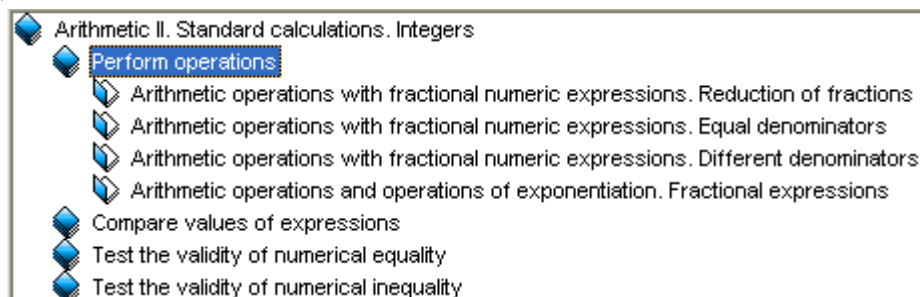


Figure 2. Expanded option

- Selecting the first option under Perform operations produced a task sheet as shown in figure 3.

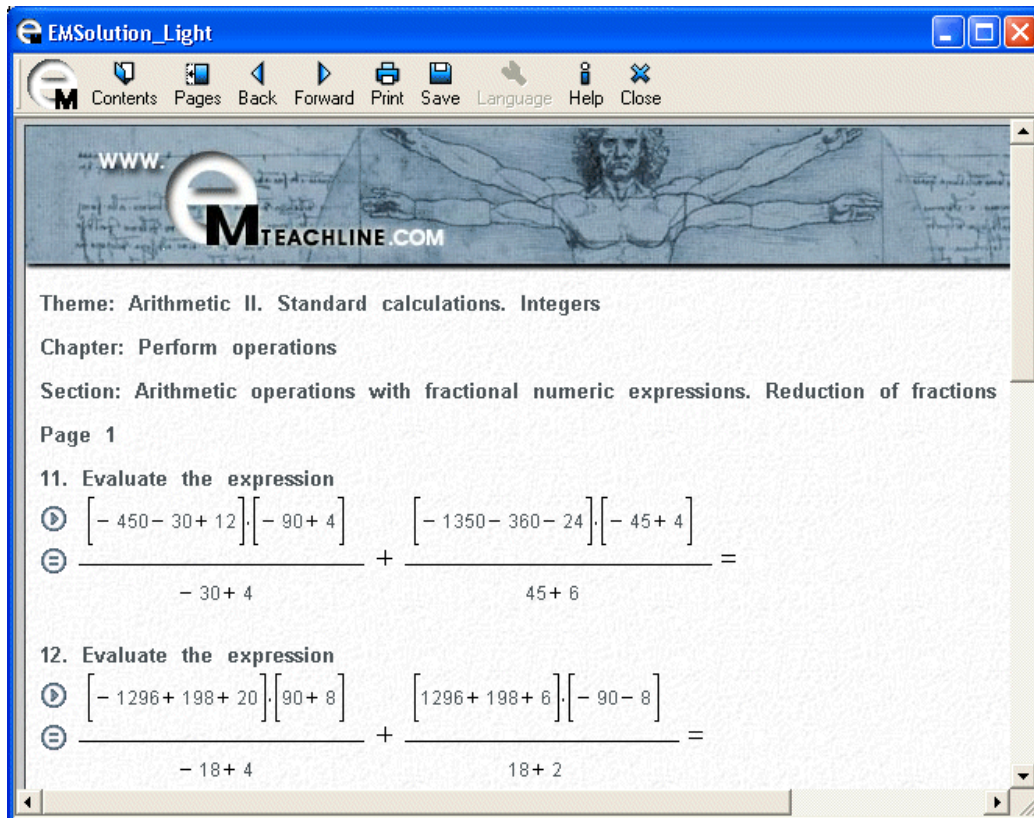


Figure 3. Task sheet

Clicking on the (=) button simply redisplay the question with its answer.

Clicking on the forward button (>) redisplay the question on its own as Figure 4.

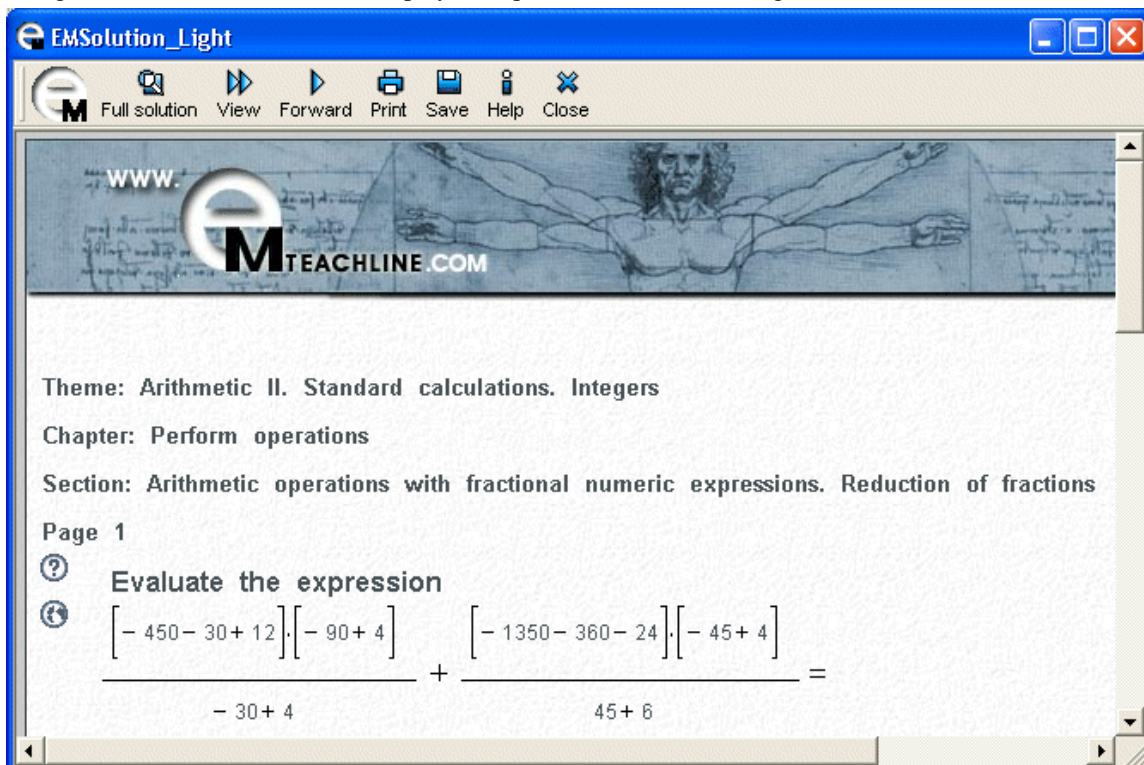


Figure 4. Task displayed on its own

On the toolbar the "Full Solution" first displays a warning screen that MathML needs to be installed then displays a fully worked solution (Figure 5).

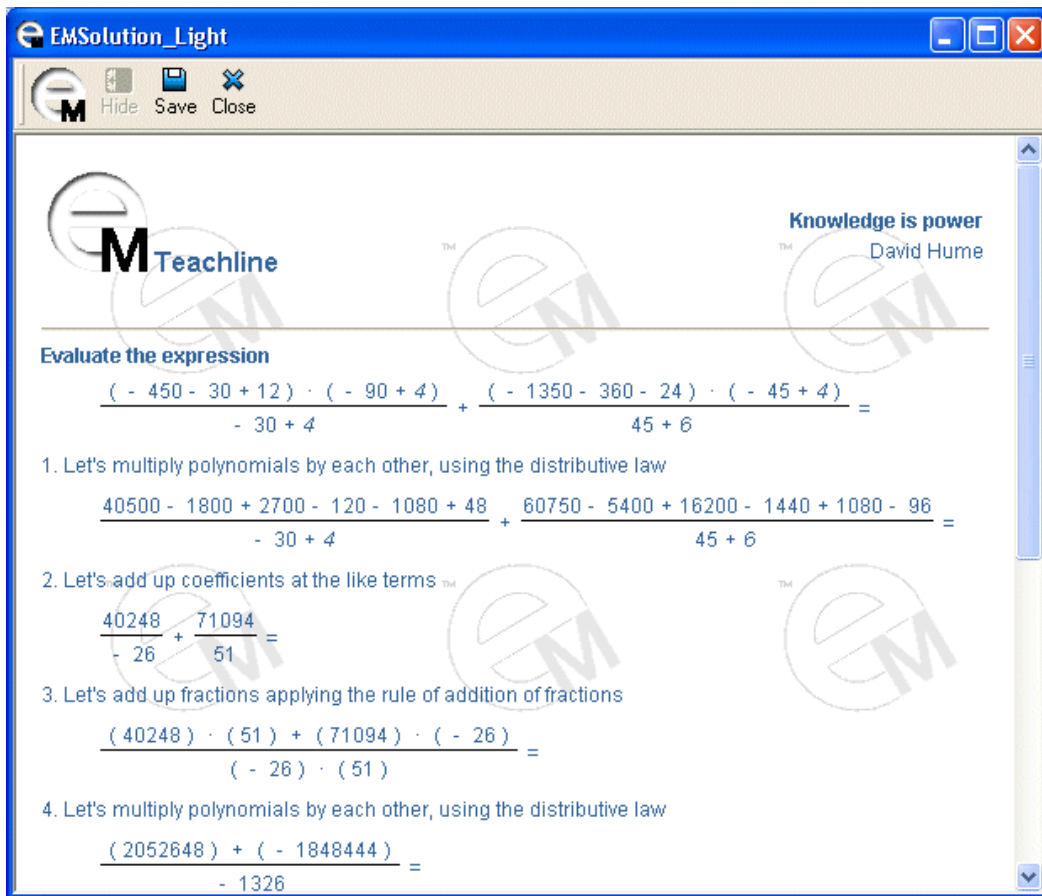


Figure 5. Worked solution

The forward button displays the worked solution one step at a time.

The View button (fast forward) displays the full worked solution in EMSolution. (The full solution is displayed in the web browser).

The (?) icon provides some term definitions as shown in figure 6. Other options shown on the tool bar also gave textual descriptions, definitions and instructions.

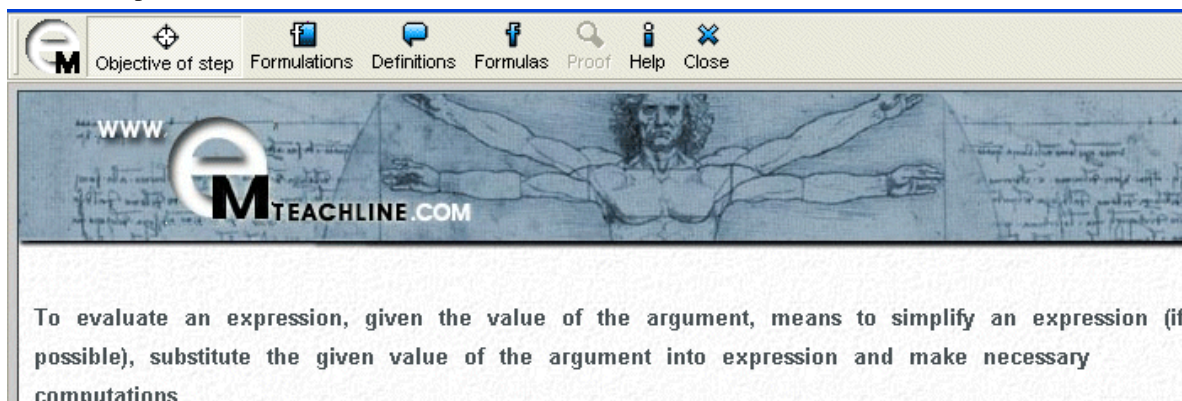


Figure 6. Help attached to task, giving definitions

The world icon display the solution instructions in two languages. (In the Lite version English, German and Ukrainian were available (Figure 7, shows the question with a Ukrainian translation). The instructions for this method were terse and assumed prior knowledge (e.g. "Let's multiply polynomials by each other, using distributive law").

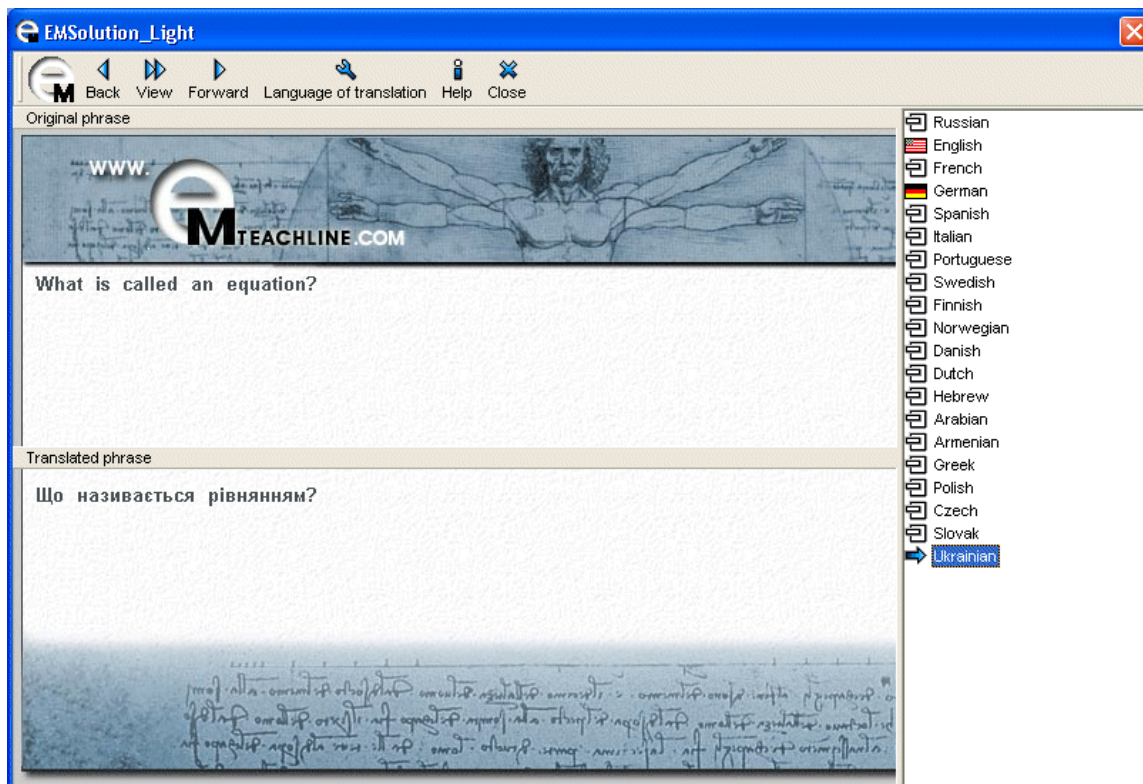


Figure 7. Help attached to task, giving definitions

Navigation proved difficult and was not intuitive. For example, I found that when trying to go back to a previous screen the application shut down entirely. If a test was selected there appeared to be no way back to the start!!, until I discovered that [X] exit button takes you back a layer (rather than back one screen). The exception when clicking the [X] button is in the collections window where the entire application shuts down.

Main features and strong points

- The main feature is that there are millions of problems and solutions available.
- The system as provided for evaluation used a book metaphor similar to a hyperlinked PDF file. Once the interface became familiar using the software was reasonably straight forward.
- The software is compiled so size was kept small.
- Contact the authors was straightforward and replies to any queries were received promptly.

Criticism and suggestions

The demonstration software provided consisted of a program that contained mathematical tasks with solutions. Initially the navigation was not intuitive with many alternative navigation paths. The implementation interface was like a text book that had been converted to a computer based environment.

From a student perspective the software would be used as follows; select a topic (this could be teacher directed), get presented with problems, solve problem on paper, go to the computer to have worked solutions displayed.

Unlike many adaptive environments the questions were the same each time, and those in the demonstration system were at a reasonably advanced level. The software provided for this review was drill/repetition based which is based on a traditional text book based pedagogy.

Although the system promised that it would analyse errors I could not discover any way to enter any work into the computer for analysis.

Some guidance as to the student age level would be useful. Further, a difficulty scale for each task would assist a teacher in a class of mixed ability students. The tasks in the evaluation version were at an advanced level.

Conclusion

The pedagogical basis of this repository is on repetition and learning by example. The software made no attempt to be a teaching tool to teach concepts. A huge bank of solved problems is provided in varying topics, but if at the same level as those supplied for review, are at a fairly advanced level.

The cost of purchasing the software is not insignificant, especially if multiple modules are to be purchased.

If this teaching style is one you or your institute adopts, and you are looking for a large task bank of questions with solutions, then this repository is worth looking into.