

INTELLIGENT TUTOR™ PRACTICE AND REVIEW SERIES

PRE-ALGEBRA

(c) 1988-2016 Intelligent Software, Inc.

Deluxe Recordkeeping Edition - Windows Version

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Installation Instructions

If you are installing from the MathTutor CD-ROM

- (a) Insert the MathTutor CD-ROM into your CD-ROM drive. The MathTutor Installation Launcher menu will appear.
- (b) On the menu, in the section labeled "Step 1 - Select Version", click "Deluxe Versions". Then, in the section labeled "Step 2 - Select Title", click the program you wish to install.
- (c) Click the "Install" button.
- (d) Enter the installation password for the program you have selected, then click OK. NOTE: The installation passwords can be found on the back cover of the CD-ROM sleeve case.
- (e) Follow the instructions on the screen. When the installation is complete you will return to the MathTutor Installation Launcher menu. You may then install another program, or quit.

If you are downloading the program from the MathTutor website

- (a) Visit the download page of our Web site:

<http://www.mathtutor.com/download.html>
- (b) Scroll down to the section titled "Downloads - Deluxe Versions". In the box with the heading "Practice and Review Series" click the "Program" link to the right of "Pre-Algebra".
- (c) If a dialog box appears and asks if you wish to "Save" or "Run", select "Save". Be sure to note where the installation file is saved.
- (d) Double click the installation file you just downloaded. The installation process will begin. Follow the instructions on the screen.

System Requirements

* Windows XP, Windows Vista, Windows 7/8, Windows 10

Starting a MathTutor Program

1. Click the **Start** button on the Windows taskbar. The Start menu opens.
2. Choose **Programs**. The Programs folder opens.
3. Choose **Intelligent Tutor**.
4. Click the program you wish to run. The program will then begin, and the title screen will appear. Click the title screen to continue.
5. The **Student Login** screen will appear. To keep records for this session, select a name and click **Login**. If you prefer to not keep records for this session, click **Skip Login**.
6. Use the main menu to select "Practice Mode" or "Test Mode".

Practice Mode allows you to select a particular problem type area, and to practice problems of that type.

Test Mode allows you to test your problem solving skills in a range of problem type areas.

Welcome to Pre-Algebra

Welcome to PRE-ALGEBRA in the INTELLIGENT TUTOR™ Practice and Review Series!

PRE-ALGEBRA will help students develop problem solving skills, and reinforce their understanding of basic concepts and principles. Designed by educators, it provides a comprehensive range of drill and practice exercises that will provide challenging practice for students, even after being used many times.

PRE-ALGEBRA can be used in two ways: Practice Mode and Test Mode.

Practice Mode allows you to select a problem type and to practice solving problems of that type. After each problem, you are told if your answer was correct or incorrect. You are then given these options: to re-do the problem; to see an explanation of the problem; to try another problem of the same type; to return to the Practice Menu to select another problem type; or, to return to the Main Menu.

Test Mode allows you to take sample tests. Following the test you will see your performance on each problem, as well as an overall evaluation of your skill level.

If you are just beginning your study of pre-algebra, or simply wish to improve your understanding of basic concepts and principles, you should also consider PRE-ALGEBRA in our Concepts and Skills Series. It makes extensive use of graphics and animation to teach the concepts and ideas of pre-algebra.

The Recordkeeping System

This program's recordkeeping system gives teachers a powerful tool for monitoring each student's use of the program. Before it can be used, the teacher must create a student list of one or more names. The instructions for doing this, and for using the other features of the recordkeeping system, are found starting on page 13.

Problem Types Covered

The 38 problem types contained in PRE-ALGEBRA are divided into the following six problem set areas:

- * ARITHMETIC SKILLS: INTEGERS
- * ARITHMETIC SKILLS: FRACTIONS
- * ARITHMETIC SKILLS: DECIMALS
- * VARIABLES AND EQUATIONS
- * ALGEBRAIC RULES
- * PROBLEM SOLVING

ARITHMETIC SKILLS: INTEGERS

1. The Number Line
2. Multiplication Table
3. Addition and Subtraction
4. Multiplication and Division
5. Addition of Several Integers
6. Addition/Subtraction of Several Integers
7. Word Problems: Addition and Subtr.
8. Word Problems: Mult. and Division.

ARITHMETIC SKILLS: FRACTIONS

9. The Number Line
10. LCM, GCD
11. Equivalent Fractions
12. Addition and Subtraction I
13. Addition and Subtraction II
14. Multiplication and Division

ARITHMETIC SKILLS: DECIMALS

15. The Number Line
16. Addition and Subtraction
17. Multiplication and Division
18. Decimals, Fractions, Percent
19. Scientific Notation

VARIABLES AND EQUATIONS

20. Words and Symbols
21. Words and Equations
22. Word Problems I
23. Word Problems II
24. Evaluating Expressions
25. Satisfying Equations I
26. Satisfying Equations II
27. Correct Solutions
28. Incorrect Equations

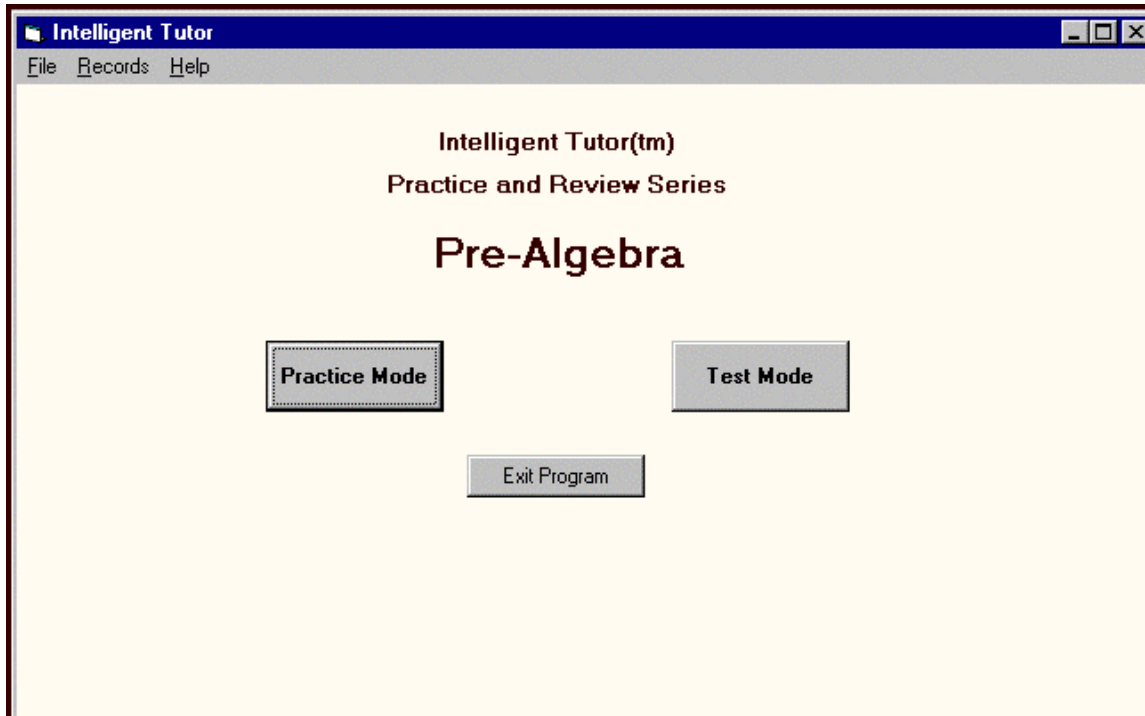
ALGEBRAIC RULES

29. Linear Terms I
30. Linear Terms II
31. Equivalent Expressions
32. Products
33. Simple Powers
34. Basic Operations
35. Inequalities

PROBLEM SOLVING

36. Word Problems: TV Sets
37. Word Problems: Percent/Ratio
38. Units of Measure

Using the Program



The main program menu (shown above) is your take-off point for using the two main parts of the program - Practice Mode and Test Mode.

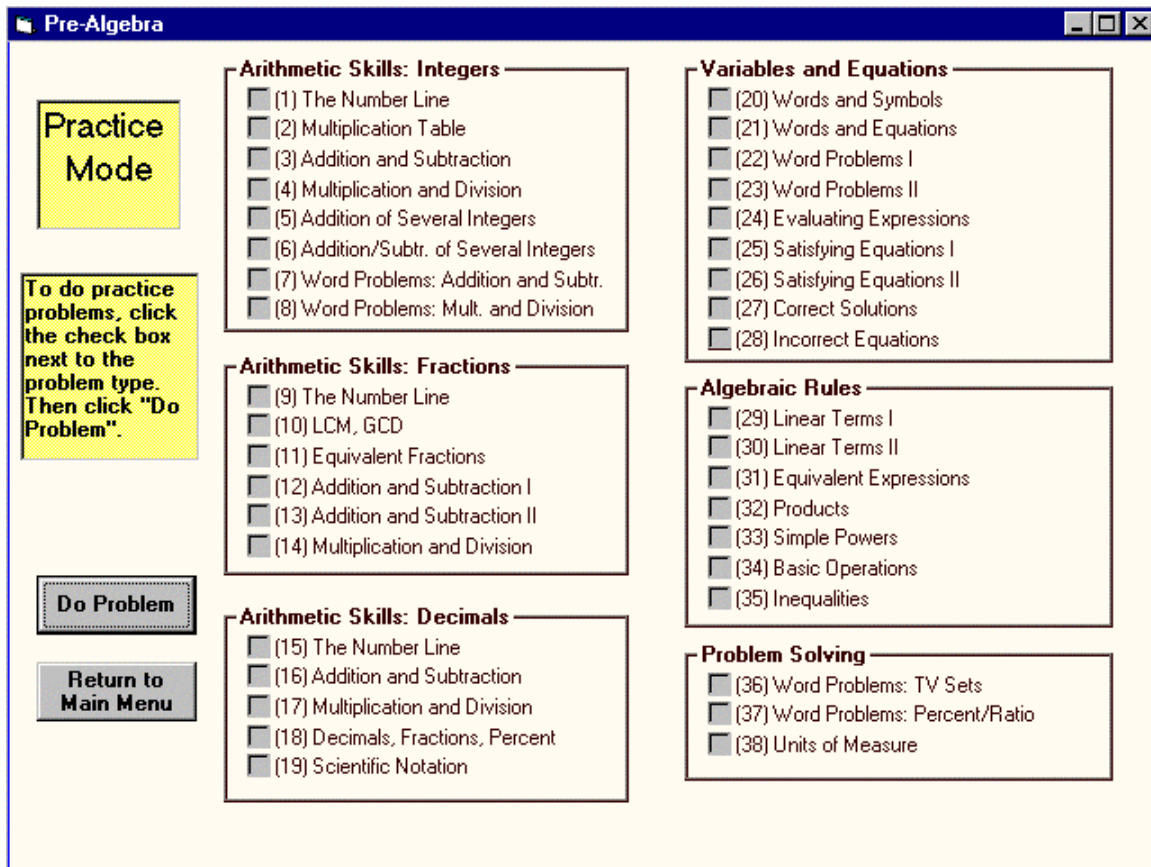
Click **Practice Mode** to see the Practice Mode Menu, which is described on the following page.

Click **Test Mode** to see the Test Menu, which is described on page 9.

Click **Exit Program** to end the program.

As you use the program, you may wish to see a summary of how well you are doing in the current session. The RECORDS menu allows you to see a summary of your performance in the current session. It is explained later in this manual.

Practice Mode



If you selected “Practice Mode” on the main menu you will see the Practice Mode Menu shown above.

This menu allows you to select a problem type to practice. Each of the 38 problem types contains thousands of random variations, assuring that the program will continue to provide new and challenging problems even after being used many times.

The Practice Mode menu groups the problems into six problem set areas, making it easier for you to find particular kinds of problems that you may wish to practice.

To begin practice in problem solving, click the check box to the left of the problem type description. Then click the “Do Problem” button.

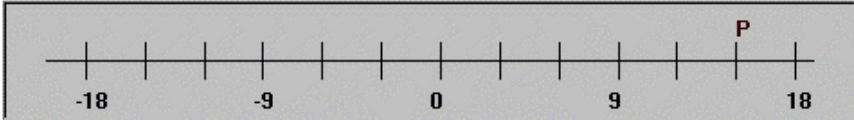
After trying a problem you'll be told immediately if your answer was correct or incorrect. If you like, you'll be able to re-do the problem. You'll also be able to see an explanation of the solution to the problem.

Practice Mode (continued)

Pre-Algebra

File Help

PROBLEM TYPE 1



On the number line shown above,
the point P approximates what number?

(A) -5 (D) 0

(B) 15 (E) None of the above

(C) -15

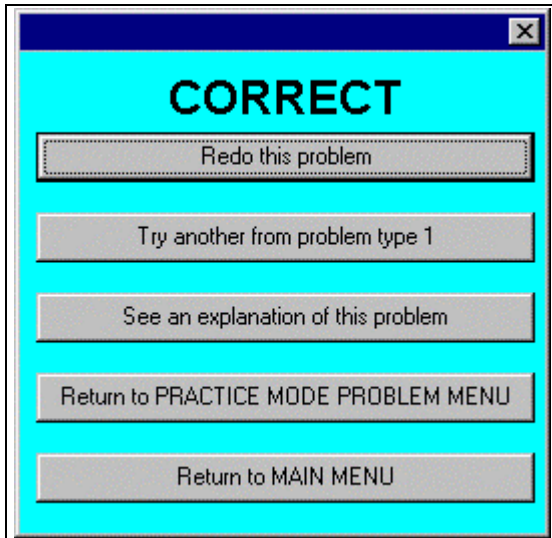
Select the best answer and click to the right

A B C D E

When the program presents a problem for you to solve, such as you see in the screen above, the answer choices will be displayed in a multiple choice format. To select an answer, click the box that contains the answer, or click one of the answer choice buttons at the bottom of the screen.

The program will respond by telling you if your answer was correct or incorrect. The options available to you at this point are shown on the following page.

Practice Mode (continued)



After doing a problem, select one of the options shown to the left.

Most of the choices are self-explanatory.

If you did not solve the problem correctly, and would like to see how it can be solved, select the third option choice: “**See an explanation of this problem**”.

Trying to solve problems is one of the best ways for you to build your math skills, so we encourage you to spend time practicing problems.

Test Mode

The screenshot shows a window titled "Test Menu" with a blue title bar and standard window controls. The main area is light gray and contains two sections:

- Type of Test:** A group box containing two radio buttons. The first is "Do problems randomly selected from all problem set areas" (unselected). The second is "Do problems randomly selected from specific problem set areas" (selected).
- Number of Problems in Test:** A group box containing six rows, each with a label and an input field with a maximum value in parentheses:
 - From: Arithmetic Skills - Integers: 4 (Max: 8)
 - From: Arithmetic Skills - Fractions: 4 (Max: 6)
 - From: Arithmetic Skills - Decimals: (Max: 5)
 - From: Variables and Equations: (Max: 9)
 - From: Algebraic Rules: (Max: 7)
 - From: Problem Solving: (Max: 3)

At the bottom of the window are two buttons: "Start Test" and "Return to Menu".

If you selected “Test Mode” on the main menu you will see the Test Menu shown above. Test mode allows you to take sample tests, and to see both a detailed evaluation of your performance and an overall evaluation of your skills.

Before you begin a test, you must specify two things. First, you must specify if you want your test to contain problems from all problem sets, or from selected problem sets. Second, you must specify the number of problems in your test. (If your test is from selected problem sets you must specify the number of problems you wish to do in each problem set.)

In the Test Menu screen above, you can see that we have specified that our test will consist of four problems from the problem set “Arithmetic Skills - Integers”, and four problems from “Arithmetic Skills - Fractions”. When the program begins the test, four problem types will be randomly selected from the eight problem types contained in “Arithmetic Skills - Integers”, and one problem will be generated for each of the four types. Likewise, four problem types will be randomly selected from the six problem types contained in “Arithmetic Skills - Fractions”, and one problem will be generated for each of the four types.

To begin your test, click “Start Test”.

Test Mode (continued)

After completing the test, the program will show you the results in two separate screens.

First, you will see your performance on each of the test problems, as shown below. For each test problem you are shown the problem type number, the problem type description, your answer, the correct answer, and whether your answer was right or wrong. Your overall percentage correct is shown in a summary box at the bottom of the screen.

Test Prob	Problem Type #	Problem Type Description	Your Answer	Correct Answer	Correct?
1	3	Add/Sub of Pos/Neg Integers	B	B	yes
2	8	Word Problems: Mult/Division	C	C	yes
3	4	Mult/Div of Positive Integers	C	C	yes
4	1	The Number Line - Integers	A	E	no
5	14	Mult/Division - Fractions	C	A	no
6	13	Add/Subtr. - Fractions and Int	A	A	yes
7	9	The Number Line - Fractions	E	E	yes
8	12	Add/Subtr. - Fractions	A	A	yes

Test Summary:

Number of problems:	8
Number correct:	6
Percent correct:	75

Proceed

Test Mode (continued)

Next, you will see an evaluation of your performance by skill category, as shown below. Each skill category represents a group of problem types that require a certain skill. The skill categories are explained in the table at the bottom of the screen. For example, the skill category “reading comprehension” consists of problem types 7, 8, 11, 18, 22, 36, 37, and 38.

Pre-Algebra

Analysis of Test Results

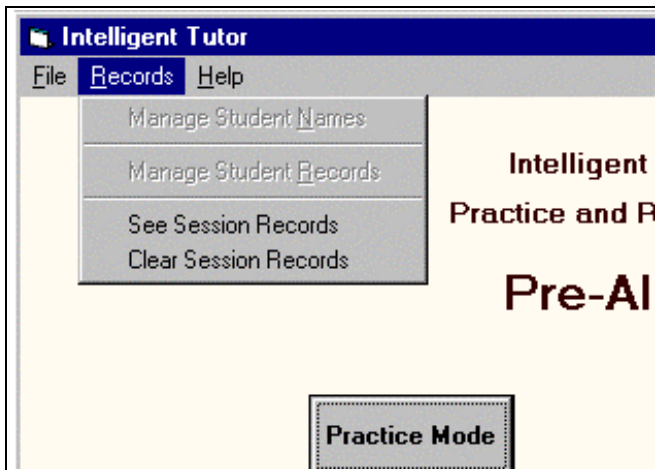
Skill Category	# of Probs in Test	Number Correct	Pct. Correct
Arithmetic skills: integers	4	3	75
Arithmetic skills: fractions	4	3	75
Arithmetic skills: decimals	0	0	—
Variables and equations	0	0	—
Rules of algebra	0	0	—
Problem solving	0	0	—
Reading comprehension	1	1	100

Each skill category consists of various problem types, as follows:

Arithmetic skills: integers.....	Problem Types 1,2,3,4,5,6,7,8
Arithmetic skills: fractions.....	Problem Types 9,10,11,12,13,14
Arithmetic skills: decimals.....	Problem Types 15,16,17,18,19
Variables and equations.....	Problem Types 20,21,22,23,24,25,26,27,28
Rules of algebra.....	Problem Types 29,30,31,32,33,34,35
Problem solving.....	Problem Types 36,37,38
Reading comprehension.....	Problem Types 7,8,11,18,22,36,37,38

Return to Main Menu **Show Test Results Again**

Looking at Your Performance in the Current Session



The **RECORDS** menu allows you to see your performance during the current session.

Select “See Session Records” to see your performance.

Select “Clear Session Records” to erase this sessions records.

The screen below shows how the current session’s records are displayed.

The screenshot shows the 'Pre-Algebra' window with a yellow background and a 'Session Results' title. A table displays the following data:

Problem Type #	Problem Type Description	Number Attempted	Number Correct	Percent Correct
01	The Number Line - Integers	2	2	100
36	Word Problems: TV Sets	2	1	50

A 'Return to Main Menu' button is located at the bottom of the window.

The Recordkeeping System

Overview

This program's recordkeeping system provides teachers with a complete history of each student's use of the program. Here's how it works. As students use the program, the following information is automatically stored in the **Student Records File**:

- Student Name
- Date
- Name of problem type
- Number of problems attempted
- Number of problems answered correctly
- Number of minutes spent in the problem type area

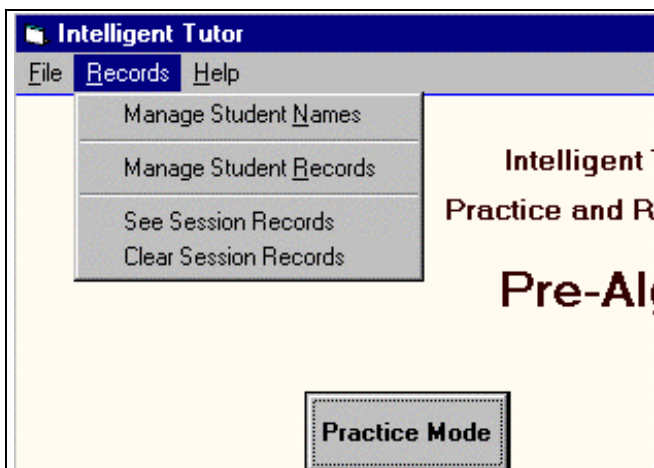
The teacher can use the recordkeeping system at any time to view this information. The teacher will see a list of the problem types each student has practiced, the dates on which they used the program, the number of minutes spent in each problem type area, and the student's performance in solving problems in each problem type area. This information can be viewed for one student, or for all students. The information can be displayed on screen, or on a printed report.

NOTE: This program and its recordkeeping system are not designed for network or site license use. It is designed for use on a single computer. If you wish to use this program on more than one computer you may purchase additional copies of the program at a special reduced priced ("lab disks"), or you may purchase a site license.

The recordkeeping system can handle up to 50 students.

Using the Recordkeeping System

The recordkeeping system is available through the **RECORDS** menu. There are two options: **Manage Student Names** and **Manage Student Records**.



NOTE: Please don't confuse the Recordkeeping System with "Session Records".

"Session Records" show a student how well he or she is doing during the current session, but are not stored after the session has ended.

The Recordkeeping System (continued)

Manage Student Names

In order to maintain student records, you must first create a **Student List** of one or more names. A student list is needed to enable students to select their name from the list and to “log in”.

The **Manage Student Names** screen allows you to add and delete student names, and to edit student names.

To add a student: Click the **Add a Student** button. Then type the name of the student and click **OK**.

To delete a student: Click the student’s name in the Student List. Then click the **Delete a Student** button.

To edit a student name: Click the student’s name in the Student List. Then click the **Edit Student Name** button. Type the new name and click **OK**.

To delete all student names: Click the **Erase All Students** button.

Manage Student Records

The **Manage Student Records** screen allows you to display on the screen, or print, records for an individual student or for all students. You may also erase the records of a single student, or all students.

To display the records for all students: Click the **Display Records for All Students** button.

To print the records for all students: Click the **Print Records for All Students** button.

To erase the records for all students: Click the **Erase Records for All Students** button.

To display the records for a single student: Click the student’s name in the Student List. Then click the **Display Records for Selected Student** button.

The Recordkeeping System (continued)

To print the records for a single student: Click the student's name in the Student List. Then click the **Print Records for Selected Student** button.

To erase the records for a single student: Click the student's name in the Student List. Then click the **Erase Records for Selected Student** button.

The illustration below shows how records are displayed on the screen for a single student.

Notice the sort choices shown at the bottom of the display. They enable you to sort the records by date, by problem type description, or by percent correct.

When you are done viewing the records, click **Done** to return to the **Manage Student Records** screen.

Name	Date	Problem Type	Probs Att.	Probs Corr.	Pct. Corr.	Grd	Mins.
Ericson, Randy	050999	Equivalent Expressions	3	2	67		1
Ericson, Randy	050999	Linear Terms I	2	2	100		2
Ericson, Randy	050999	Linear Terms I	2	2	100		1
Ericson, Randy	050999	Several Vars.	2	1	50		3

Sort By: Name Percent Date Lesson

Sort Direction: Increasing Decreasing

Done