

MATH BLASTER!TM

by Jan Davidson, Ph.D.
and Richard K. Eckert, Jr.



math

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***To our children,
Elizabeth, Emilie, and John Davidson,
Noel and Christopher Eckert,
who have taught us so much about learning.***

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Math Blaster!

has received the following awards for excellence:

CERTIFIED GOLD AWARD

– Software Publishers Association

BEST SELLING NEW EDUCATIONAL PRODUCT

Education Category

– *Softsell/Business Week*

OUTSTANDING EDUCATIONAL PRODUCT

– *Parent's Choice*

TOP SELLER, EDUCATIONAL/HOME CATEGORY

– *Software Retailing*

NUMBER ONE EDUCATIONAL MOVER

– Computer Software Service

HIGHLY RECOMMENDED

– *Book of Apple Software*

BEST MATH PRODUCT 1986

– *La Prensa Newspaper*

SOFTWARE EXCELLENCE AWARD 1986

Classroom Category

– *Nibble*

INTRODUCTION

Welcome to *Math Blaster*! You will find *Math Blaster* an interesting and exciting way to learn basic mathematical facts. The program contains extensive data files of facts in addition; subtraction, multiplication, division, fractions, decimals and percents. The program also contains a versatile editor which allows you to use your own sets of facts with all the learning activities.

Math Blaster was designed to accomplish three major objectives:

1. to help you memorize math facts that are essential to building basic math skills
2. to help improve your accuracy and increase your speed
3. to build your math skills in an interesting, entertaining, and effective way.

Each of the program's 25 data files provides concentrated practice on "families" of facts. These are facts that should be memorized. You should know them instantly without stopping to calculate. For this reason, during the program when a 2-digit answer is called for, you will **not** be asked to type in the answer from right to left as if you were calculating it, but from left to right as if you were recalling it.

Math Blaster is useful for the elementary student who must master the math facts which are essential building blocks for more advanced mathematics.

The section on fractions and decimals is especially helpful to the 6th or 7th grade student preparing for algebra and higher math. The more difficult files (on fraction-percentage equivalents) can even help the college-bound student to increase speed so essential to a high SAT score.

Math Blaster can also be effective as a brush-up tool for the adult who wishes to sharpen his math skills. Mastery of these facts is valuable in quickly and accurately making various day to day computations, as well as useful in making more difficult, involved calculations.

Math Blaster was designed by Dr. Jan Davidson and programmed by Richard Eckert. The data files were designed by Cathy Johnson, a math teacher who has been using computers as instructional tools since 1979.

Math Blaster was tested on students at the educational facility of Upward Bound in Palos Verdes, California. In private sessions under the direction of an instructor, Upward Bound's students significantly increased their speed and sharpened their accuracy. Students who spent 15 to 20 minutes daily on *Math Blaster's* well-designed, fast-moving exercises made impressive gains. You will find, as these students have, that learning math facts has never been so much fun, so exciting and so effective!

GETTING STARTED

Before you begin using *Math Blaster*, please complete the registration card and return it to Davidson & Associates, Inc. This will register your warranty and ensure that you receive important information and technical support for *Math Blaster*, announcements of updates, and information on new products. In addition, if your disk malfunctions within five years, it will be replaced at no charge to you.

Back-up Copies

The program files *are protected* and you will not be able to copy them. You may purchase a back-up copy for \$10.00 at the time you send in your registration card, or later, by writing to Davidson & Associates, Inc. A 3 1/2 inch disk may be requested.

The data files *are not protected* and you should make your own back-up copy using the copy program which came with your **Apple**, **IBM**, or **Commodore** computer.

If you are using an **Atari** computer, you may make a back-up copy directly from the Data Disk. Boot the Data Disk and follow the directions below:

- When the cursor appears, type DOS <Return>.
- When the DOS menu appears, remove the Data Disk and insert the blank disk.
- Choose option I to format the disk; then select option J to duplicate the Data Disk.

Included in this Package

In this package you will find:

- the *Math Blaster* program, complete data files, and registration card
- the manual which you are now reading.

Please note that throughout the manual <Return> will be used to indicate a carriage return.

Starting the Apple Version

To use *Math Blaster*, Apple version, you need:

- an Apple IIGS, IIc, IIe, or II+
- one or two disk drives
- a monitor (or tv)
- the *Math Blaster* disk (program on Side 1, data on Side 2)
- a joystick (optional)
- a printer (optional).

If you are planning to use *Math Blaster* with two disk drives, copy the data (Side 2) onto a separate, formatted disk, using the copy program on your System Master or Utilities disk. Be sure to format the disk with **DOS 3.3**.

When using an Apple IIe or IIc, be sure that the Caps Lock is set.

To run the program, follow these steps.

1. Insert the program (Side 1) into the disk drive (drive 1 if you have more than one drive) and turn on the computer.
2. While your disk is booting, press **D** if you wish to see a demonstration of the program.
3. You will be asked to type your name and make several option choices. If you are using only one drive, you will be instructed when to reinsert the disk, data side up.

Starting the IBM Version

To use *Math Blaster*, IBM version, you need:

- an IBM Personal Computer (or compatible) with one or two double sided drives
- a monitor (or tv)
- DOS 1.1 or higher and 128K of memory
- advanced BASIC (BASICA) or GWBASIC
- a Monochrome Adapter or Color/Graphics Adapter
- the *Math Blaster* Disk
- a joystick (optional)
- a printer (optional).

To run the program, follow these steps.

1. Insert the DOS disk (1.1 or greater) into drive A and turn on your computer to boot the DOS. If your computer is already on, press the Ctrl, Alt, and Del keys all at the same time to boot the DOS.
2. Enter the date and time; at the A>, type the name of your BASIC file (**basica** or **gwbasic**) <Return>.
3. At the OK prompt, remove the DOS disk and insert the *Math Blaster* disk.
4. If your computer has a Color/Graphics Adapter, type **run"color** <Return>. If it has a Monochrome Display Adapter, type **run"mono** <Return>.

Note: The terms "color" and "mono" do not refer to the type of monitor. If you are not sure which type of adapter your computer contains, try "color" first, then "mono."

Note to Hard Disk Users

To run *Math Blaster*, put the disk in drive A. If your BASIC file resides in the root directory, at the C>, type **c:basica a:color** or **c:gwbasic a:color**.

If your BASIC file is in a subdirectory named DOS on your hard disk, type **c:\DOS\basica a:color** or **c:\DOS\gwbasic a:color**. If your BASIC file is in another subdirectory, use that name between the slashes.

Making *Math Blaster* Self-Booting

Making *Math Blaster* self-booting includes:

transferring the DOS system files,
copying the file named COMMAND.COM,
creating a file named AUTOEXEC.BAT, and
copying the BASIC file to the *Math Blaster* disk.

Below are the directions for making Math Blaster self-booting on an IBM or compatible machine with **two floppy disk drives**. If your compatible does not respond to these commands, see page 49 for additional information.

1. Insert your DOS disk in drive A, the *Math Blaster* disk in drive B. Turn on your computer. If your computer is already on, press the Ctrl, Alt, and Del keys all at the same time to boot the DOS disk. Enter the date and time.
2. At the A>, type **b:c-config.bat** <Return> (for color) or **b:m-config.bat** <Return> (for monochrome) and follow the screen directions. If you have only one disk drive, it will be necessary to switch disks several times.

Note: The word "monochrome" denotes a monochrome display adapter; "color" denotes a color/graphics adapter. It does not describe the type of monitor you are using. Determine which adapter your computer has before making the *Math Blaster* disk self-booting.

Starting the Atari Version

To use *Math Blaster*, Atari version, you need:

- an Atari 800XL, 65E or 130XE computer
- an 850, 1050, or compatible disk drive
- a monitor (or tv)
- the *Math Blaster* Program Disk (Atari side)
- the *Math Blaster* Data Disk (Atari side)
- a joystick (optional)
- a printer (optional).

To run the program, follow these steps.

1. Make sure your computer is off and that there is no disk in the drive. Turn on the drive.
2. Insert the *Math Blaster* program (Atari side up) into the drive.
3. Turn on the computer and the monitor.
4. After a brief introduction, you will be asked to type your name and make option choices. You will be instructed when to remove the Program Disk and insert the Data Disk.

Press **P** while loading the program if you wish to see a preview. Select #7 from the activity menu to change any options which you selected at the beginning of the program.

Starting the Commodore Version

To use *Math Blaster*, Commodore version, you need:

- a Commodore 64 or 128 computer
- a 1541 disk drive
- a monitor (or tv)
- the *Math Blaster* Program Disk (Commodore side)
- the *Math Blaster* Data Disk (Commodore side)
- a joystick (optional)
- a printer (optional).

To run the program, follow these steps. (On a Commodore 128 computer, switch to the 64 mode before you begin.)

1. Make sure that your computer is off and that there is no disk in the drive. First, turn on the disk drive; then, turn on the computer.
2. Insert the *Math Blaster* program disk (Commodore side up); type **LOAD "MATH BLASTER",8** <Return>.
3. When the drive stops, type **RUN** <Return>. Be patient; it takes about a minute and a half to load.

After a brief introduction, you will be asked to type your name and to make several option choices. Follow the screen prompts to remove the Program Disk and insert the Data Disk.

Selecting **P** from the main menu will allow you to see a preview of the program.

The Menus

When the Main Menu appears, you may select a subject from the list: Addition, Subtraction, Multiplication, Division, or Fractions, Decimals and Percents. Selecting **6. Data Disk** from the Main Menu allows you to access a file which you entered using *Math Blaster's* editor. Next, select a level. Each subject has 5 levels. (See the Appendix for help in selecting a level.)

You may select from these four learning activities:

1. Look and Learn
2. Build Your Skill
3. Challenge Yourself
4. Math Blaster!

Selecting option #5 from the Activity Menu allows you to load a new file and study new problems.

USING THE PROGRAM

Selecting a Subject and a Level

You may select addition, subtraction, multiplication, division, or fractions, decimals and percents. Each subject has five levels.

The levels for addition, subtraction, multiplication, and division are sequential in difficulty. In the fractions, decimals and percents sections, practice is provided in the following:

- Level 1 - reducing common fractions,
- Level 2 - renaming improper fractions,
- Level 3 - renaming common fractions as decimals,
- Level 4 - renaming decimals as percents,
- Level 5 - renaming percents as fractions.

Use the following as a guide to help you select a level.

Addition

- Level 1 - Grade 1
- Level 2 - Grade 1
- Level 3 - Grade 2
- Level 4 - Grade 2
- Level 5 - Grade 2

Subtraction

- Level 1 - Grade 1
- Level 2 - Grade 1
- Level 3 - Grade 2
- Level 4 - Grade 2
- Level 5 - Grade 2

Multiplication

Level 1 - Grade 3

Level 2 - Grade 3

Level 3 - Grade 3

Level 4 - Grade 4

Level 5 - Grade 4

Division

Level 1 - Grade 3

Level 2 - Grade 3

Level 3 - Grade 3

Level 4 - Grade 4

Level 5 - Grade 4

Fractions, Decimals

Level 1 - Grade 5

Level 2 - Grade 5

Level 3 - Grade 6

Level 4 - Grade 6

Level 5 - Grade 6

The grades specified are the grades in which the facts are usually introduced in school. Any level is appropriate for practice, review and mastery as needed by the older student.

You may find it helpful to look at the Appendix of this manual to view the problems presented on each level for each subject.

The Activities

Once you have selected a level, begin with Look and Learn and continue working through the activities in the order they are presented.

Look and Learn - This activity presents the facts contained in the file. You may select

horizontal display $4 + 6 = 10$

vertical display 4
 +6
 10

or a mixed display which alternately presents the two formats. Each fact will be displayed for 4 seconds. If you wish to change the display time, use the keys indicated on the selection screen.

Build Your Skill - This activity asks you to recall what you have just learned. You may choose the horizontal, vertical, or mixed format. When the problem appears on the screen, type in the answer <Return>. When you finish, your score will be displayed. You will then have an opportunity to retake the items you missed. Retake them until you get a perfect score.

Challenge Yourself - This activity requires that you not only know the math facts, but reason with them as well. A problem will be presented with a part of it missing. Type in the number or numbers of the missing part <Return>. When you finish, your score will be displayed. Again, you will have an opportunity to retake the items you missed. Retake them until you get a perfect score.

Math Blaster! - **Math Blaster!** is a fast-action arcade game that reinforces learning in an interesting and exciting way. The object of the game is to shoot the man out of the cannon at the correct answer. The problem appears at the bottom of the screen. The correct answer will be one of four choices displayed at the top of the screen. Each game consists of 30 math facts.

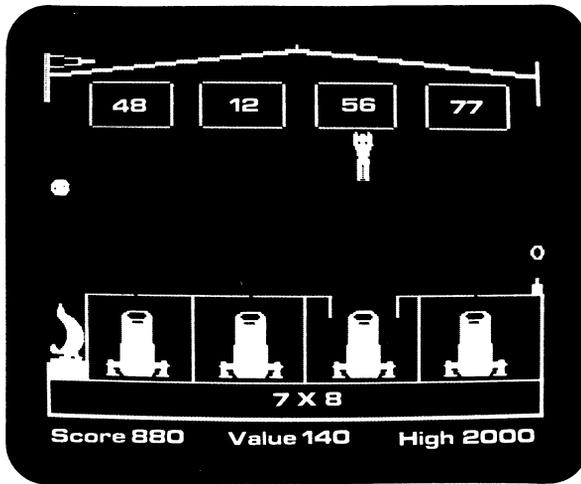
Use a joystick or the **K** and **L** keys (arrow keys on the Apple) to move the man to the correct position over the cannon, and use the joystick button or the **Z** key to shoot.

On the left side of the screen is a seal bouncing a ball on his nose. The seal serves as a timer for each problem. You must shoot the man out of the cannon before the ball returns to the seal's nose.

Watch the balloon! On the right side of the screen is a balloon that is floating down to the platform. Beware! There is a needle on the platform, and if the balloon pops, the game will be over. You must move your man over to the far right and have him push the balloon back up in the air again to keep the game going. Use the **Z** key or the button on your joystick to do this.

The game can be played at five speeds. Begin with the regular speed and proceed to faster speeds as you gain proficiency.

The faster you are able to play the game, the higher your score will be. Of course, getting a high score requires a thorough knowledge of the math facts.



Special Features

Positive Reinforcement - Throughout the *Math Blaster* program, your correct answers are rewarded with positive, encouraging messages. You are never scolded for an incorrect answer. If your first response is incorrect, you will be asked to "Try again." After a second incorrect response, the correct answer will appear. In the Build Your Skill and Challenge Yourself activities, you will receive a special message for each group of ten correct answers and for a perfect score. Learning has never been so much fun!

Reviewing the Items You Missed - At the conclusion of Build Your Skill and Challenge Yourself, you may retake any items you missed, allowing you to concentrate your efforts on only those facts you have not yet mastered.

Sound Effects - Optional sound effects are activated by each correct response.

Display Time - In the Look and Learn activity, you can control the length of time the problem stays on the screen. Increase or decrease the display time by pressing the keys indicated on the screen.

Elapsed Time Indicator - As you use the Build Your Skill and Challenge Yourself activities, notice the numbers in the bottom right hand corner of the screen. A timer counts the number of seconds it takes you to answer. Watch your speed increase as you gain proficiency.

ESC Feature - Pressing the escape key <Esc> (Apple, IBM, Atari) or <f1> (Commodore) at any time during the program will return you to the menu.

Game Speed - The IBM version has a 0 (zero) speed option for the game for those who need an extra-slow speed.

USING THE EDITOR

Use the editor to enter your own sets of problems to use with all four learning activities. The *Math Blaster* editor allows you to make corrections with ease, as well as add or remove items from the file.

To use the editor, you will need:

- the *Math Blaster* Program Disk
- a new, formatted disk on which to save your new list of problems.

Step 1 - Composing Your Data File

First, compose your list of problems on paper. Each file must contain at least 5 problems. For **Apple** and **Commodore**, the files may contain up to 26 problems; for **IBM** and **Atari**, the files may contain no more than 28 problems.

Directions for either the **Build Your Skill** activity or the **Challenge Yourself** activity may contain no more than 25 characters and spaces.

The maximum length for each problem is:

- 18 characters and spaces, with no more than 6 characters to the right of the equal sign (**Apple**, **Atari**, **Commodore 64**)
- 10 characters (**IBM**).

Use only one operation sign (+ - * #) in each problem.

You may type words (your directions) only on lines 1 and 2 of each file. Words or letters inserted within the problems themselves will not allow the program to work properly.

The only symbols that will work properly with the program are:

- + (for addition)
- (for subtraction)
- # (for division)
- * (for multiplication)
- = (for the equal sign)
- . (for the decimal point)
- % (for the percent sign)
- / (for fractions).

Step 2 - Formatting a Blank Disk

Apple Version

Before you access the editor, format a blank disk with DOS 3.3 to prepare it to accept your list of problems. Follow the procedure outlined below.

- Insert the *Math Blaster Data* (Side 2) in the drive and turn on the computer.
- Remove the disk from the drive and replace it with a new blank disk.
- At the cursor, type **INIT HELLO** <Return>.

When the drive light goes out and the cursor reappears, the disk formatting process is completed.

IBM Version

Formatting a blank disk prepares it to accept your list of problems. Follow these simple steps.

- Insert an IBM DOS (1.1 or higher) into drive A (the left drive) and turn on the computer.
- If you are using a two-drive system, place the new blank disk in drive B. If you are using a one-drive system, the screen will tell you to insert the new disk after you have typed the formatting command.
- Enter the date and time.
- At the A>, type **format b:** <Return>.
- Press any key to start the formatting process.
- When the drive stops, answer **N** to "Format another disk (Y/N)?"

You now have a formatted data disk on which to save your own math data files.

Atari Version

Follow these steps to format a new disk with DOS 2.0. This prepares it to accept your list of problems.

- Turn on your disk drive and insert the *Math Blaster* Data Disk.
- Turn on your computer to boot the Data Disk.
- Follow the formatting instructions that appear on the screen.

Commodore Version

Formatting a blank disk prepares it to accept your new list of problems. Follow these simple steps.

Make sure that your computer is off and that there is no disk in the drive. Turn on the printer first, if you are going to use one. Turn on the disk drive before turning on the computer.

- Insert the new blank disk into the disk drive.
- Type **OPEN15,8,15,"NEWØ;BLASTER
VOLUME 2,Ø2" <Return>**.

When the disk drive light goes out, the disk formatting process is completed.

Step 3 - Accessing the Editor

Apple Version

Start the program as described in the Getting Started section of the manual. When the main menu appears, press **E** for Editor and follow the screen prompts.

IBM Version

Start the program as described in the Getting Started section of this manual. When the main menu appears, press **E** for Editor and follow the screen prompts.

Atari Version

Turn on the disk drive and insert the program disk. Be sure you have inserted the Atari side up. Turn on the computer. Press **E** (for Editor) while the program is loading.

Commodore Version

Start your system as described in the Getting Started section. Insert the Program Disk, Commodore side up, into the disk drive and type **LOAD "EDITOR",8 <Return>**. When the drive stops, type **RUN <Return>**.

Step 4 - Entering New Problems

Your editor screen should look similar to the editor screen below.

```
***MATH BLASTER EDITOR***
copyright 1983 Davidson & Associates

The prompt line at the bottom of the
screen displays the editor commands.
For help, use the .h command.

1" —
New line 1
.e .l .d .i .s .g .p .c .q .h
```

The editor is now ready to receive your new data file. **STOP AND READ CAREFULLY** all of the remaining steps before proceeding. Use the following guidelines when you type in your new problems.

- On line 1, type in the directions (i.e. Type the quotient.) for Build your Skill <Return>.
- On line 2, type in the directions for Challenge Yourself (i.e. Type the missing dividend.) and press <Return>. Even if these directions are the same as those in line 1, they must be typed in again if they are to appear on the screen during this activity.
- On line 3, type in the first problem from your list <Return>.

Apple, Atari, Commodore - You must press the space bar between each part of the problem and before and after the equal sign. For example, to enter the problem $2 + 2 = 4$

type 2
press space bar
type +
press space bar
type 2
press space bar
type =
press space bar
type 4
press <Return>.

Note: In the **Apple** version, a comma will appear after the equal sign. This is NOT an error. The editor automatically inserts the comma which allows the program to operate quickly and smoothly.

IBM version - Do NOT leave spaces within the problem or before and after the equal sign.

The following is a sample file for your reference.

- 1 Type the quotient.
- 2 Type the missing dividend.
- 3 $6 \# 2 = 3$
- 4 $10 \# 5 = 2$
- 5 $12 \# 2 = 6$
- 6 $8 \# 2 = 4$
- 7 $4 \# 2 = 2$

Be sure to follow the format for your computer exactly as it is outlined. You can easily correct any errors you make, either at the time you make them or later. See the Commands of the Editor section.

Step 5 - Saving Your File

The last step is to save your new file onto your data disk.

- Be sure your new data disk is in the correct drive.
- Type `.s` <Return>.
- When you are asked "Save file name?" type the name of your data file, being sure to stay within these limits.

Apple - 15 characters and spaces

IBM - 8 characters with no spaces

Atari - 8 characters with no spaces

Commodore - 15 characters

The bottom of the screen will look something like this.

```
28 .s
Save file name? SET2
```

When you press <Return>, the disk will whirl, and your new set of problems will be saved onto the disk. To test your file with the program, exit the editor by typing `.q` and following the instruction on the screen.

Be sure that you do NOT duplicate a name that has been used. Press **.c** for catalog (Apple) or **.d** for directory (IBM, Atari, Commodore) at this time if you wish to list the files already on the disk.

Using Your New File

To use your new file with the *Math Blaster* program, follow these steps.

- Start the program as outlined in the Getting Started section of the manual.
- When you are asked to insert the data disk, insert the disk which contains your new data file.
- When you are asked to select a subject, press **6** (Data Disk) and a list of all the files on your data disk will be displayed.
- Type in the name (for Apple, IBM, Atari) or the number (for Commodore) of the file you wish to access <Return>.

Editing a File

You may want to edit your file to correct an error or change a problem.

- Access the editor.
- Type `.g` (to get the file) <Return>.
- If you aren't sure of the name, type `.c` (Apple) or `.d` (IBM, Atari, Commodore) to list the existing files.
- Enter the name of your file <Return>.

When your file is loaded into the computer's memory, you may list the file to review it or edit individual lines that need correcting. Remember to save your file if you make any changes.

Commands of the Editor

The following commands are used to correct, extend, or shorten your file.

Edit - The edit command allows you to change a line that has been entered.

- Type `.e` followed by the line number you wish to change <Return>.
- The line you wish to edit will appear and you may change or correct it as you wish, pressing <Return> after you have made your changes.

List - The list command allows you to review your entire file.

- Type **.l** <Return>.
- Use the space bar to stop and restart the scrolling.

You may begin listing at any point in the file. Type **.l** followed by the line number at which you wish to begin. To stop the listing before all lines have been displayed, press <Return>.

Delete - This command will remove an entire line from the file and automatically renumber all the lines following it. If you wish to remove the words and leave a blank line, use the edit command.

- Type **.d** followed by the number of the line you wish to delete <Return>.
- The line will appear and you will be asked "Delete this? (y/n)".
- If you press "y", the line will be deleted; if you press "n", it will remain.

Insert - This command allows you to insert one or more lines into the file.

- Type **.i** followed by the number of the line you want to begin your insert <Return>.
- Insert as many lines as you wish. The lines which follow your insert will be renumbered automatically.
- Type **.q** at beginning of the next line to quit inserting <Return>.

Save - The save command saves a new file or a corrected file onto disk. Be sure to use this command each time you enter a new file or make any corrections.

- Type `.s` <Return>.
- Type the name of the file <Return>.

Be sure that you do NOT duplicate a name that has been used unless you wish to replace that existing file. You may press `.c` (Apple) or `.d` (IBM, Atari, or Commodore) to list the existing files.

Get - The get command will load a file from a disk into the computer's memory.

- Be sure that the disk in the drive is the one containing the data file you wish to access.
- Type `.g` followed by the exact name of the file you wish to load.

If you are not sure of the exact name of the file, type `.c` (Apple) or `.d` (IBM, Atari, Commodore) <Return>.

To delete an entire file from your data disk, follow the instructions for your computer.

Apple - Use the DOS command **DELETE**.

IBM - Use the DOS command **erase** or **del**.

Atari - Boot the *Math Blaster* data disk. When the DOS menu appears, remove the data disk and insert the disk which contains the file you wish to delete. Answer **N** to the format question. When the cursor appears, type **DOS** <Return>. Select **D** and follow the screen prompts.

Commodore - Type **OPEN15,8,15,"I"** <Return>.

Then type **PRINT#15,"S0:NAME OF FILE"** <Return>.

Print - You may print out your entire file.

- Make sure that the file you want to print is the one now loaded into the computer's memory and that the printer is turned on.
- Type **.p** <Return>.

If you wish to stop the printer before the file has been completely printed, press <Return>.

Clear - This command clears the screen to get ready for a new file.

- Type **.c** <Return>.

Be sure you have saved your data or your corrections on the disk.

Quit - This command allows you to exit the Editor and return to the *Math Blaster* program.

- Type **.q** <Return>.
- Remember to save your file first if you wish to keep it.

Help - This command will display a list of all the Editor commands and their functions.

- Type **.h** <Return>.

Additional Notes on the Editor

The first few times you use the Editor, create a small data file, using only 5 to 10 problems. Try using the file with the *Math Blaster* program to be sure you're on the right track. You can add more problems to the file later.

You will find the *Math Blaster* editor versatile and easy-to-use. Take time to get acquainted with it.

Having Trouble?

If your new file does not work smoothly with the program, check to see that you have:

- directions only on the first two lines
- only one operation sign in each problem
- the correct number of characters per problem
- no unnecessary spaces
- an allowed number of problems in your file
- not used symbols other than $+$ $-$ $*$ $\#$ $=$ $.$ $\%$ $/$
- named your file properly.

Math Readiness Data File

On your *Math Blaster* Data Disk is a math readiness file named PREMATH. This file is for pre-school and kindergarten children. It is a numeral recognition file that can be used with all the *Math Blaster* activities. You access it as you would one of your own data files. Premath will run successfully only in the horizontal mode.

ABOUT THE AUTHORS

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Richard Eckert holds a B. S. in Electrical Engineering from Purdue University. He is a professional programmer and has written a variety of software, particularly educational software.

Other software packages written by the authors include *Word Attack*, *Spell It*, and *Speed Reader II*.

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APPENDIX

ADDITION

Level 1

**Combinations
with sums to 10.**

$$\begin{array}{l} 1 + 1 = 2 \\ 2 + 0 = 2 \\ 2 + 1 = 3 \\ 3 + 0 = 3 \\ 3 + 1 = 4 \\ 2 + 2 = 4 \\ 4 + 0 = 4 \\ 4 + 1 = 5 \\ 3 + 2 = 5 \\ 5 + 0 = 5 \\ 5 + 1 = 6 \\ 4 + 2 = 6 \\ 3 + 3 = 6 \\ 6 + 1 = 7 \\ 5 + 2 = 7 \\ 4 + 3 = 7 \\ 7 + 1 = 8 \\ 6 + 2 = 8 \\ 5 + 3 = 8 \\ 4 + 4 = 8 \\ 8 + 1 = 9 \\ 7 + 2 = 9 \\ 6 + 3 = 9 \\ 5 + 4 = 9 \\ 9 + 0 = 9 \end{array}$$

Level 2

**Bridging the 10's
with sums to 14.**

$$\begin{array}{l} 9 + 1 = 10 \\ 8 + 2 = 10 \\ 7 + 3 = 10 \\ 6 + 4 = 10 \\ 5 + 5 = 10 \\ 10 + 1 = 11 \\ 9 + 2 = 11 \\ 8 + 3 = 11 \\ 7 + 4 = 11 \\ 6 + 5 = 11 \\ 10 + 2 = 12 \\ 9 + 3 = 12 \\ 8 + 4 = 12 \\ 7 + 5 = 12 \\ 6 + 6 = 12 \\ 11 + 2 = 13 \\ 10 + 3 = 13 \\ 9 + 4 = 13 \\ 8 + 5 = 13 \\ 7 + 6 = 13 \\ 11 + 3 = 14 \\ 10 + 4 = 14 \\ 9 + 5 = 14 \\ 8 + 6 = 14 \\ 7 + 7 = 14 \end{array}$$

Level 3

Sums from 15 to 18.

$$\begin{aligned}13 + 2 &= 15 \\12 + 3 &= 15 \\11 + 4 &= 15 \\10 + 5 &= 15 \\9 + 6 &= 15 \\8 + 7 &= 15 \\14 + 2 &= 16 \\13 + 3 &= 16 \\12 + 4 &= 16 \\11 + 5 &= 16 \\10 + 6 &= 16 \\9 + 7 &= 16 \\8 + 8 &= 16 \\14 + 3 &= 17 \\13 + 4 &= 17 \\12 + 5 &= 17 \\11 + 6 &= 17 \\10 + 7 &= 17 \\9 + 8 &= 17 \\14 + 4 &= 18 \\13 + 5 &= 18 \\12 + 6 &= 18 \\11 + 7 &= 18 \\10 + 8 &= 18 \\9 + 9 &= 18\end{aligned}$$

Level 4

Sums from 20 to 100,
addends in multiples of 10

$$\begin{aligned}10 + 10 &= 20 \\20 + 10 &= 30 \\30 + 10 &= 40 \\40 + 10 &= 50 \\30 + 20 &= 50 \\50 + 10 &= 60 \\40 + 20 &= 60 \\30 + 30 &= 60 \\60 + 10 &= 70 \\50 + 20 &= 70 \\40 + 30 &= 70 \\70 + 10 &= 80 \\60 + 20 &= 80 \\50 + 30 &= 80 \\40 + 40 &= 80 \\80 + 10 &= 90 \\70 + 20 &= 90 \\60 + 30 &= 90 \\50 + 40 &= 90 \\90 + 10 &= 100 \\80 + 20 &= 100 \\70 + 30 &= 100 \\60 + 40 &= 100 \\50 + 50 &= 100\end{aligned}$$

Level 5

**Bridging the 20's,
with sums from 19 to 25.**

$$11 + 8 = 19$$

$$11 + 9 = 20$$

$$11 + 10 = 21$$

$$12 + 7 = 19$$

$$12 + 8 = 20$$

$$12 + 9 = 21$$

$$12 + 10 = 22$$

$$13 + 6 = 19$$

$$13 + 7 = 20$$

$$13 + 8 = 21$$

$$13 + 9 = 22$$

$$13 + 10 = 23$$

$$14 + 5 = 19$$

$$14 + 6 = 20$$

$$14 + 7 = 21$$

$$14 + 8 = 22$$

$$14 + 9 = 23$$

$$14 + 10 = 24$$

$$15 + 4 = 19$$

$$15 + 5 = 20$$

$$15 + 6 = 21$$

$$15 + 7 = 22$$

$$15 + 8 = 23$$

$$15 + 9 = 24$$

$$15 + 10 = 25$$

SUBTRACTION

Level 1

**Minuends from 8 to 10,
subtrahends from 0 to 9.**

$$\begin{aligned}8 - 1 &= 7 \\8 - 2 &= 6 \\8 - 3 &= 5 \\8 - 4 &= 4 \\8 - 5 &= 3 \\8 - 6 &= 2 \\8 - 7 &= 1 \\9 - 1 &= 8 \\9 - 2 &= 7 \\9 - 3 &= 6 \\9 - 4 &= 5 \\9 - 5 &= 4 \\9 - 6 &= 3 \\9 - 7 &= 2 \\9 - 8 &= 1 \\10 - 0 &= 10 \\10 - 1 &= 9 \\10 - 2 &= 8 \\10 - 3 &= 7 \\10 - 4 &= 6 \\10 - 5 &= 5 \\10 - 6 &= 4 \\10 - 7 &= 3 \\10 - 8 &= 2 \\10 - 9 &= 1\end{aligned}$$

Level 2

**Minuends from 11 to 15,
subtrahends from 0 to 5.**

$$\begin{aligned}11 - 0 &= 11 \\11 - 1 &= 10 \\11 - 2 &= 9 \\11 - 3 &= 8 \\11 - 4 &= 7 \\11 - 5 &= 6 \\12 - 0 &= 12 \\12 - 1 &= 11 \\12 - 2 &= 10 \\12 - 3 &= 9 \\12 - 4 &= 8 \\12 - 5 &= 7 \\13 - 0 &= 13 \\13 - 1 &= 12 \\13 - 2 &= 11 \\13 - 3 &= 10 \\13 - 4 &= 9 \\13 - 5 &= 8 \\14 - 0 &= 14 \\14 - 1 &= 13 \\14 - 2 &= 12 \\14 - 3 &= 11 \\14 - 4 &= 10 \\14 - 5 &= 9 \\15 - 0 &= 15 \\15 - 1 &= 14 \\15 - 2 &= 13 \\15 - 3 &= 12 \\15 - 4 &= 11 \\15 - 5 &= 10\end{aligned}$$

Level 3

**Minuends from 11 to 15,
subtrahends from 6 to 11.**

$$\begin{aligned} 11 - 6 &= 5 \\ 11 - 7 &= 4 \\ 11 - 8 &= 3 \\ 11 - 9 &= 2 \\ 11 - 10 &= 1 \\ 11 - 11 &= 0 \\ 12 - 6 &= 6 \\ 12 - 7 &= 5 \\ 12 - 8 &= 4 \\ 12 - 9 &= 3 \\ 12 - 10 &= 2 \\ 12 - 11 &= 1 \\ 13 - 6 &= 7 \\ 13 - 7 &= 6 \\ 13 - 8 &= 5 \\ 13 - 9 &= 4 \\ 13 - 10 &= 3 \\ 13 - 11 &= 2 \\ 14 - 6 &= 8 \\ 14 - 7 &= 7 \\ 14 - 8 &= 6 \\ 14 - 9 &= 5 \\ 14 - 10 &= 4 \\ 14 - 11 &= 3 \\ 15 - 6 &= 9 \\ 15 - 7 &= 8 \\ 15 - 8 &= 7 \\ 15 - 9 &= 6 \\ 15 - 10 &= 5 \\ 15 - 11 &= 4 \end{aligned}$$

Level 4

**Minuends from 60 to 100,
subtrahends from 20 to 90
in multiples of 10.**

$$\begin{aligned} 60 - 50 &= 10 \\ 60 - 40 &= 20 \\ 60 - 30 &= 30 \\ 60 - 20 &= 40 \\ 70 - 60 &= 10 \\ 70 - 50 &= 20 \\ 70 - 40 &= 30 \\ 70 - 30 &= 40 \\ 70 - 20 &= 50 \\ 80 - 70 &= 10 \\ 80 - 60 &= 20 \\ 80 - 50 &= 30 \\ 80 - 40 &= 40 \\ 80 - 30 &= 50 \\ 80 - 20 &= 60 \\ 90 - 80 &= 10 \\ 90 - 70 &= 20 \\ 90 - 60 &= 30 \\ 90 - 50 &= 40 \\ 90 - 40 &= 50 \\ 90 - 30 &= 60 \\ 90 - 20 &= 70 \\ 100 - 90 &= 10 \\ 100 - 80 &= 20 \\ 100 - 70 &= 30 \\ 100 - 60 &= 40 \\ 100 - 50 &= 50 \\ 100 - 40 &= 60 \\ 100 - 30 &= 70 \\ 100 - 20 &= 80 \end{aligned}$$

Level 5

**Minuends from 15 to 20,
subtrahends from 5 to 9.**

$$15 - 5 = 10$$

$$15 - 6 = 9$$

$$15 - 7 = 8$$

$$15 - 8 = 7$$

$$15 - 9 = 6$$

$$16 - 5 = 11$$

$$16 - 6 = 10$$

$$16 - 7 = 9$$

$$16 - 8 = 8$$

$$16 - 9 = 7$$

$$17 - 5 = 12$$

$$17 - 6 = 11$$

$$17 - 7 = 10$$

$$17 - 8 = 9$$

$$17 - 9 = 8$$

$$18 - 5 = 13$$

$$18 - 6 = 12$$

$$18 - 7 = 11$$

$$18 - 8 = 10$$

$$18 - 9 = 9$$

$$19 - 5 = 14$$

$$19 - 6 = 13$$

$$19 - 7 = 12$$

$$19 - 8 = 11$$

$$19 - 9 = 10$$

$$20 - 5 = 15$$

$$20 - 6 = 14$$

$$20 - 7 = 13$$

$$20 - 8 = 12$$

$$20 - 9 = 11$$

MULTIPLICATION

Level 1

**Multipliers from 2 to 5,
multiplicands from 1 to 5.**

$$\begin{aligned} 2 \times 1 &= 2 \\ 2 \times 2 &= 4 \\ 2 \times 3 &= 6 \\ 2 \times 4 &= 8 \\ 2 \times 5 &= 10 \\ 3 \times 1 &= 3 \\ 3 \times 2 &= 6 \\ 3 \times 3 &= 9 \\ 3 \times 4 &= 12 \\ 3 \times 5 &= 15 \\ 4 \times 1 &= 4 \\ 4 \times 2 &= 8 \\ 4 \times 3 &= 12 \\ 4 \times 4 &= 16 \\ 4 \times 5 &= 20 \\ 5 \times 1 &= 5 \\ 5 \times 2 &= 10 \\ 5 \times 3 &= 15 \\ 5 \times 4 &= 20 \\ 5 \times 5 &= 25 \end{aligned}$$

Level 2

**Multipliers from 1 to 5,
multiplicands from 6 to 9.**

$$\begin{aligned} 1 \times 6 &= 6 \\ 1 \times 7 &= 7 \\ 1 \times 8 &= 8 \\ 1 \times 9 &= 9 \\ 2 \times 6 &= 12 \\ 2 \times 7 &= 14 \\ 2 \times 8 &= 16 \\ 2 \times 9 &= 18 \\ 3 \times 6 &= 18 \\ 3 \times 7 &= 21 \\ 3 \times 8 &= 24 \\ 3 \times 9 &= 27 \\ 4 \times 6 &= 24 \\ 4 \times 7 &= 28 \\ 4 \times 8 &= 32 \\ 4 \times 9 &= 36 \\ 5 \times 6 &= 30 \\ 5 \times 7 &= 35 \\ 5 \times 8 &= 40 \\ 5 \times 9 &= 45 \end{aligned}$$

Level 3

**Facts from 6 x 0 to 6 x 11
and from 7 x 0 to 7 x 11.**

$$\begin{array}{l} 6 \times 0 = 0 \\ 6 \times 1 = 6 \\ 6 \times 2 = 12 \\ 6 \times 3 = 18 \\ 6 \times 4 = 24 \\ 6 \times 5 = 30 \\ 6 \times 6 = 36 \\ 6 \times 7 = 42 \\ 6 \times 8 = 48 \\ 6 \times 9 = 54 \\ 6 \times 10 = 60 \\ 6 \times 11 = 66 \\ 7 \times 0 = 0 \\ 7 \times 1 = 7 \\ 7 \times 2 = 14 \\ 7 \times 3 = 21 \\ 7 \times 4 = 28 \\ 7 \times 5 = 35 \\ 7 \times 6 = 42 \\ 7 \times 7 = 49 \\ 7 \times 8 = 56 \\ 7 \times 9 = 63 \\ 7 \times 10 = 70 \\ 7 \times 11 = 77 \end{array}$$

Level 4

**Facts from 8 x 0 to 8 x 11
and from 9 x 0 to 9 x 11.**

$$\begin{array}{l} 8 \times 0 = 0 \\ 8 \times 1 = 8 \\ 8 \times 2 = 16 \\ 8 \times 3 = 24 \\ 8 \times 4 = 32 \\ 8 \times 5 = 40 \\ 8 \times 6 = 48 \\ 8 \times 7 = 56 \\ 8 \times 8 = 64 \\ 8 \times 9 = 72 \\ 8 \times 10 = 80 \\ 8 \times 11 = 88 \\ 9 \times 0 = 0 \\ 9 \times 1 = 9 \\ 9 \times 2 = 18 \\ 9 \times 3 = 27 \\ 9 \times 4 = 36 \\ 9 \times 5 = 45 \\ 9 \times 6 = 54 \\ 9 \times 7 = 63 \\ 9 \times 8 = 72 \\ 9 \times 9 = 81 \\ 9 \times 10 = 90 \\ 9 \times 11 = 99 \end{array}$$

Level 5

**Facts from 11 x 1 to 11 x 12
and from 12 x 1 to 12 x 12.**

11	x	1	=	11
11	x	2	=	22
11	x	3	=	33
11	x	4	=	44
11	x	5	=	55
11	x	6	=	66
11	x	7	=	77
11	x	8	=	88
11	x	9	=	99
11	x	10	=	110
11	x	11	=	121
11	x	12	=	132
12	x	1	=	12
12	x	2	=	24
12	x	3	=	36
12	x	4	=	48
12	x	5	=	60
12	x	6	=	72
12	x	7	=	84
12	x	8	=	96
12	x	9	=	108
12	x	10	=	120
12	x	11	=	132
12	x	12	=	144

DIVISION

Level 1

**Divisors from 2 to 5,
quotients from 1 to 5.**

$$\begin{array}{l} 2 \div 2 = 1 \\ 4 \div 2 = 2 \\ 6 \div 2 = 3 \\ 8 \div 2 = 4 \\ 10 \div 2 = 5 \\ 3 \div 3 = 1 \\ 6 \div 3 = 2 \\ 9 \div 3 = 3 \\ 12 \div 3 = 4 \\ 15 \div 3 = 5 \\ 4 \div 4 = 1 \\ 8 \div 4 = 2 \\ 12 \div 4 = 3 \\ 16 \div 4 = 4 \\ 20 \div 4 = 5 \\ 5 \div 5 = 1 \\ 10 \div 5 = 2 \\ 15 \div 5 = 3 \\ 20 \div 5 = 4 \\ 25 \div 5 = 5 \end{array}$$

Level 2

**Divisors from 1 to 5,
quotients from 6 to 9.**

$$\begin{array}{l} 6 \div 1 = 6 \\ 7 \div 1 = 7 \\ 8 \div 1 = 8 \\ 9 \div 1 = 9 \\ 12 \div 2 = 6 \\ 14 \div 2 = 7 \\ 16 \div 2 = 8 \\ 18 \div 2 = 9 \\ 18 \div 3 = 6 \\ 21 \div 3 = 7 \\ 24 \div 3 = 8 \\ 27 \div 3 = 9 \\ 24 \div 4 = 6 \\ 28 \div 4 = 7 \\ 32 \div 4 = 8 \\ 36 \div 4 = 9 \\ 30 \div 5 = 6 \\ 35 \div 5 = 7 \\ 40 \div 5 = 8 \\ 45 \div 5 = 9 \end{array}$$

Level 3

**Divisors of 6 and 7,
quotients from 0 to 11.**

$$\begin{aligned}0 \div 6 &= 0 \\6 \div 6 &= 1 \\12 \div 6 &= 2 \\18 \div 6 &= 3 \\24 \div 6 &= 4 \\30 \div 6 &= 5 \\36 \div 6 &= 6 \\42 \div 6 &= 7 \\48 \div 6 &= 8 \\54 \div 6 &= 9 \\60 \div 6 &= 10 \\66 \div 6 &= 11 \\0 \div 7 &= 0 \\7 \div 7 &= 1 \\14 \div 7 &= 2 \\21 \div 7 &= 3 \\28 \div 7 &= 4 \\35 \div 7 &= 5 \\42 \div 7 &= 6 \\49 \div 7 &= 7 \\56 \div 7 &= 8 \\63 \div 7 &= 9 \\70 \div 7 &= 10 \\77 \div 7 &= 11\end{aligned}$$

Level 4

**Divisors of 8 and 9,
quotients from 0 to 11.**

$$\begin{aligned}0 \div 8 &= 0 \\8 \div 8 &= 1 \\16 \div 8 &= 2 \\24 \div 8 &= 3 \\32 \div 8 &= 4 \\40 \div 8 &= 5 \\48 \div 8 &= 6 \\56 \div 8 &= 7 \\64 \div 8 &= 8 \\72 \div 8 &= 9 \\80 \div 8 &= 10 \\88 \div 8 &= 11 \\0 \div 9 &= 0 \\9 \div 9 &= 1 \\18 \div 9 &= 2 \\27 \div 9 &= 3 \\36 \div 9 &= 4 \\45 \div 9 &= 5 \\54 \div 9 &= 6 \\63 \div 9 &= 7 \\72 \div 9 &= 8 \\81 \div 9 &= 9 \\90 \div 9 &= 10 \\99 \div 9 &= 11\end{aligned}$$

Level 5

Divisors of 11 and 12, quotients from 1 to 12.

$$11 \div 11 = 1$$

$$22 \div 11 = 2$$

$$33 \div 11 = 3$$

$$44 \div 11 = 4$$

$$55 \div 11 = 5$$

$$66 \div 11 = 6$$

$$77 \div 11 = 7$$

$$88 \div 11 = 8$$

$$99 \div 11 = 9$$

$$110 \div 11 = 10$$

$$121 \div 11 = 11$$

$$132 \div 11 = 12$$

$$12 \div 12 = 1$$

$$24 \div 12 = 2$$

$$36 \div 12 = 3$$

$$48 \div 12 = 4$$

$$60 \div 12 = 5$$

$$72 \div 12 = 6$$

$$84 \div 12 = 7$$

$$96 \div 12 = 8$$

$$108 \div 12 = 9$$

$$120 \div 12 = 10$$

$$132 \div 12 = 11$$

$$144 \div 12 = 12$$

FRACTIONS, DECIMALS, AND PERCENTS

Level 1

Reducing common fractions
to lowest terms.

$$\begin{aligned} 4/8 &= 1/2 \\ 6/12 &= 1/2 \\ 8/16 &= 1/2 \\ 4/12 &= 1/3 \\ 6/18 &= 1/3 \\ 6/9 &= 2/3 \\ 8/12 &= 2/3 \\ 12/18 &= 2/3 \\ 3/12 &= 1/4 \\ 4/16 &= 1/4 \\ 6/8 &= 3/4 \\ 9/12 &= 3/4 \\ 12/16 &= 3/4 \\ 2/10 &= 1/5 \\ 3/15 &= 1/5 \\ 4/10 &= 2/5 \\ 6/10 &= 3/5 \\ 8/10 &= 4/5 \\ 2/12 &= 1/6 \\ 10/12 &= 5/6 \\ 2/14 &= 1/7 \\ 4/14 &= 2/7 \\ 6/14 &= 3/7 \\ 8/14 &= 4/7 \\ 10/14 &= 5/7 \\ 12/14 &= 6/7 \\ 2/16 &= 1/8 \\ 6/16 &= 3/8 \\ 10/16 &= 5/8 \\ 14/16 &= 7/8 \end{aligned}$$

Level 2

Renaming improper fractions

$$\begin{aligned} 2/2 &= 1 \\ 3/2 &= 1 \ 1/2 \\ 4/2 &= 2 \\ 5/2 &= 2 \ 1/2 \\ 6/2 &= 3 \\ 3/3 &= 1 \\ 4/3 &= 1 \ 1/3 \\ 5/3 &= 1 \ 2/3 \\ 6/3 &= 2 \\ 4/4 &= 1 \\ 5/4 &= 1 \ 1/4 \\ 7/4 &= 1 \ 3/4 \\ 8/4 &= 2 \\ 5/5 &= 1 \\ 6/5 &= 1 \ 1/5 \\ 7/5 &= 1 \ 2/5 \\ 8/5 &= 1 \ 3/5 \\ 9/5 &= 1 \ 4/5 \\ 10/5 &= 2 \\ 8/8 &= 1 \\ 9/8 &= 1 \ 1/8 \\ 11/8 &= 1 \ 3/8 \\ 13/8 &= 1 \ 5/8 \\ 15/8 &= 1 \ 7/8 \\ 16/8 &= 2 \\ 10/10 &= 1 \\ 11/10 &= 1 \ 1/10 \\ 13/10 &= 1 \ 3/10 \\ 17/10 &= 1 \ 7/10 \\ 20/10 &= 2 \end{aligned}$$

Level 3

Renaming common fractions as decimals.

$1/10 = .1$
$3/10 = .3$
$5/10 = .5$
$7/10 = .7$
$9/10 = .9$
$1/100 = .01$
$3/100 = .03$
$5/100 = .05$
$9/100 = .09$
$10/100 = .10$
$18/100 = .18$
$25/100 = .25$
$36/100 = .36$
$52/100 = .52$
$70/100 = .70$
$81/100 = .81$
$98/100 = .98$
$1/1000 = .001$
$3/1000 = .003$
$5/1000 = .005$
$9/1000 = .009$
$10/1000 = .010$
$18/1000 = .018$
$25/1000 = .025$
$52/1000 = .052$
$70/1000 = .070$
$100/1000 = .100$
$120/1000 = .120$
$203/1000 = .203$
$476/1000 = .476$

Level 4

Renaming decimals as per

$1 = 100\%$
$1.5 = 150\%$
$2 = 200\%$
$5 = 500\%$
$15 = 1500\%$
$21 = 2100\%$
$.1 = 10\%$
$.2 = 20\%$
$.3 = 30\%$
$.5 = 50\%$
$.8 = 80\%$
$.9 = 90\%$
$.01 = 1\%$
$.05 = 5\%$
$.07 = 7\%$
$.12 = 12\%$
$.16 = 16\%$
$.25 = 25\%$
$.47 = 47\%$
$.69 = 69\%$
$.83 = 83\%$
$.001 = .1\%$
$.006 = .6\%$
$.013 = 1.3\%$
$.025 = 2.5\%$
$.027 = 2.7\%$
$.105 = 10.5\%$
$.135 = 13.5\%$
$.307 = 30.7\%$
$.751 = 75.1\%$

IBM version may differ slightly.

Level 5

Renaming percents as fractions.

	50%	=	1/2
33	1/3%	=	1/3
66	2/3%	=	2/3
	25%	=	1/4
	75%	=	3/4
	20%	=	1/5
	40%	=	2/5
	60%	=	3/5
	80%	=	4/5
16	2/3%	=	1/6
83	1/3%	=	5/6
12	1/2%	=	1/8
37	1/2%	=	3/8
62	1/2%	=	5/8
87	1/2%	=	7/8
	10%	=	1/10
	30%	=	3/10
	70%	=	7/10
	90%	=	9/10
8	1/3%	=	1/12

IBM version may differ slightly.

Additional Self-Booting Instructions

If you are using an IBM compatible, your BASIC file may have some other name, such as **gwbasic**. If so, you should type **gwbasic** instead of **basica** in the appropriate commands.

If your computer does not have a color/graphics adapter, use **mono** in place of **color** in the appropriate command.

If your computer has **one floppy disk and one hard (fixed) disk**, put the Math Blaster disk in drive A and type:

```
sys a: <Enter>
```

```
copy c:command.com a: <Enter>
```

On some hard disks, COMMAND.COM is in a subdirectory named DOS. If so, you should type:

```
copy c:\DOS\command.com a: <Enter>.
```

If your COMMAND.COM is in another subdirectory, type that name instead of "DOS" between the slashes.

```
copy con a:autoexec.bat <Enter>
```

```
a:basica a:color <Enter>
```

If your BASIC file is in a subdirectory, use the name of that subdirectory between the slashes.

```
( c:\DOS\basica a:color or c:\DOS\gwbasic a:color)
```

```
F6 <Enter>
```

```
copy c:basica.* a: <Enter>
```

(Some compatibles require transferring the gwbasic.exe file as well.)

For computers with **one floppy disk drive** only:

Place the DOS disk in the drive and type **sys b:** <Enter>.

Follow directions on screen to insert *Math Blaster* disk.

Insert the DOS in drive A, and type

copy a:command.com b: <Enter>.

Follow the directions on the screen.

Insert the DOS in drive A, and type

copy con a:autoexec.bat <Enter>

a:basica a:color <Enter>

F6 <Enter>.

Follow the directions on the screen.

Insert the DOS in drive A and type

copy a:basica.* b: <Enter>.

Follow the directions on the screen.

If your computer has **two floppy disk drives**, place the DOS disk in drive A, the *Math Blaster* disk in drive B, and type:

sys b: <Enter>

copy command.com b: <Enter>

copy con b:autoexec.bat <Enter>

a:basica a:color <Enter>

F6 <Enter>

copy a:basica.* b: <Enter>.