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**1 Manual Update**

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**2 Handbuch-Aktualisierung**

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**3 Mise à jour de manuel**

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**4 マニュアル・アップデート**



Update Number: 1  
October 1992

# Manual Update

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## Manual Identification

Title: HP Solve Equation  
Library Application Card  
Owner's Manual  
Part Number: 82211-90001  
Edition: 2

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## New Game




On page 189 of the *Owner's Manual*, insert the following four-page description of Tetris before the Minehunt Game description.

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## Tetris Game

As you play Tetris, seven different pieces emerge one at a time from the top of your board in random order. Each falls at a controlled speed to the bottom. You can rotate a piece as it falls and move it right and left. If you can create a solid row at the bottom, that row disappears and your score increases. Otherwise, pieces collect at the bottom as incomplete rows. A new piece then has a shorter distance to fall, and you have less time to maneuver it as it falls. The more incomplete rows you allow to form, the more hectic your play becomes! The standard game ends when incomplete rows fill the board.


### Playing Tetris

Use the command TETRIS or press  LIBRARY UTILS   TETRI to begin the Tetris game.


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#### Note

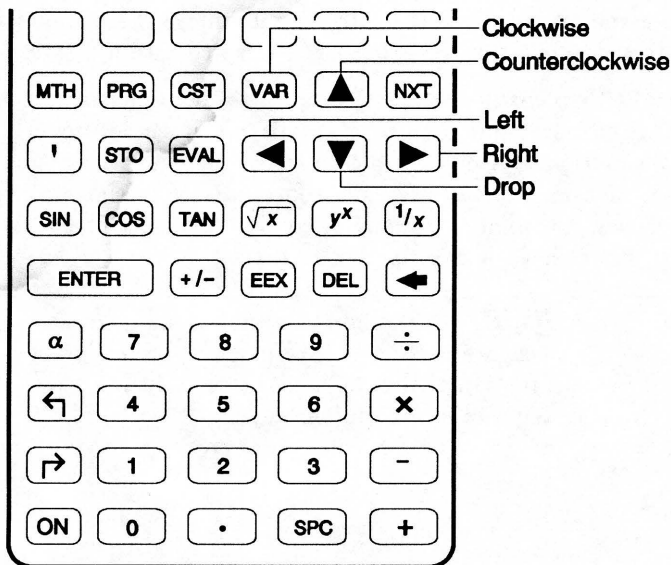


Press  after the copywrite and USSR screens to bypass them quickly.

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A way to start Tetris more quickly is to store the program «TETRIS» under a convenient name such as TET. Then, to start Tetris, press  TET.


When a piece moves down your board, you can move it both left and right, rotate it both clockwise and counterclockwise, and move it immediately (drop it) to the bottom of the board (thereby earning more points). The diagram below shows the default key assignments for these actions.



## Changing the Playing Conditions

The menu keys you use to change the playing conditions for a new game are described below. Press **SETUP** to display these menu keys and to display the initial playing conditions.

- Press **LEVEL** to set the speed of the falling pieces at the start of the game.
- Press **TURBO** to change the speeds assigned to each level. A **TURBO ON** level of 0 is about equal to a **TURBO OFF** level of 7 or 8. With **TURBO ON**, the speed differences between levels are smaller, so that at level 9, both **TURBO ON** and **TURBO OFF** speeds are about equal.
- Press **FILL** to set the number of incomplete rows on the board at the beginning of the game.
- Press **NEXT** to set the initial state of next-piece preview or to toggle preview during a game.

  
 with the **NXT**  
 key.

- Press **END** to control the number of erased rows that define the end of the game. When END is 0 (the default entry) there is no fixed limit to the number of rows that can be erased during a game.
- Press **KEYS** to change the keys assigned to motions (moving, rotating, and dropping a piece as it falls). You cannot directly assign a motion to a key to which you've previously assigned another motion. For instance, say you've already assigned drop to **6** and now you want to assign left to **6**. You must first reassign drop to a new key, then assign left to **6**.

## Note



**ATTN** will not accept a motion assignment. If you assign a motion to **STO**, **NXT**, or **→**, the original function of that key will be lost until you reassign the motion to another key.

## Scoring

### Tetris Scoring

Action	Point Score
Drop key not used	2 when piece reaches bottom
Drop key used	2 for each row passed during drop plus 2 when piece reaches bottom
Erase one row	40 multiplied by (level number + 1)
Erase two rows at one time	100 multiplied by (level number + 1)
Erase three rows at one time	300 multiplied by (level number + 1)
Erase four rows at one time	1200 multiplied by (level number + 1)
Next-piece preview not used	Drop points + erased row points
Next-piece preview used	.67 multiplied by (Drop points + erased row points)

## Stopping Play

You can stop a game in two ways before it ends naturally. To end the game without saving it, press **(ATTN)**. To save a game for later completion, press **(STO)**. To restart a saved game, press **CONT** from the main menu.

## Two-Person Game

Two people, each operating an HP 48SX, can play each other. Use the IR transfer mode to communicate between the two calculators as you play. Each player can set independent playing conditions to adjust for different skill levels.

To set each calculator to IR communication, press **(←) (I/O) SETUP**. If the displayed I/O Setup Menu shows *wire*, press **IR/wire** to switch to IR communication.

The only difference between a one-person and a two-person game is what happens when one player erases more than one row at a time. When that happens, extra incomplete rows are added to the opponent's board as shown in the following table:

Rows You Erase	Rows Added to Opponent
1	0
2	1
3	2
4	4

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## New Option for the Multiple-Equation Solver

Replace the section “Changing Label Colors and Variable States” on page 38 of the *Owner’s Manual* with the following:

### Changing Label Colors and Variable States

By changing the state of flag 63, you can now select two ways to change the states of Multiple-Equation Solver variables—between user-defined (black menu label) and not defined (white menu label).

#### Flag 63 clear (the default state)

Use the MUSER and MCALC commands (MUSE and MCAL in the last page of the solver menu) to change label colors. You may need to do this while supplying guesses or altering the problem.

To change a variable to user-defined, press  $\square$ , press the menu key for the variable, then press MUSE—or recall and store its value ( $\rightarrow$  X0 X0).

To change a variable to not defined, press  $\square$ , press the menu key for the variable, then press MCAL—“calculated” value. You can change *all* variables to not defined by pressing ALL.

To change the states of several variables, press  $\rightarrow$  {}, press each variable key, press ENTER, then press MUSE or MCAL.

#### Flag 63 set

Press  $\rightarrow$  followed by the variable’s menu key to change either from user-defined to not defined or from not defined to user-defined.

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## Other Changes

- All equations with more than one argument have the arguments separated by “;” instead of “,”. This causes only one manual equation, on **page 91**, to be changed as follows:

$$f = F0\lambda(\lambda2;T) - F0\lambda(\lambda1;T)$$

- On **page 2**, in the third paragraph, replace the first sentence “© Copyright Hewlett-Packard Co. 1990.” with “© Copyright Hewlett-Packard 1990, 1992.”
- On **page 2**, below the present last paragraph, add the following as a new last paragraph:

“Tetris © 1987 V/O Electronorgtechnica (Elorg). All rights reserved. Tetris ® is a registered trademark of Elorg. Tetris licensed to BPS and sublicensed to Hewlett-Packard Company. Original concept by Alexey Pazhitnov.”

- On **page 31**, insert before “Using the Menu Keys”:

Many equations in the Equation Library use commands such as CONST from the Constants Library or TDELTA from the Utilities Library. If you create a variable with the same name as one of those commands, any equation containing that command will not work correctly. Be sure you do not create variables whose names match commands in the application card.

- On **page 32**, change the “Recall value” and “Set states” entries in the table as follows:



### Actions for Solver Menu Keys

Operation	HP Solve Application	Multiple-Equation Solver
Recall value, flag 63 clear	[↩] [X]	[↩] [X] [↩] [X]
Recall value, flag 63 set	[↩] [X]	['] [X] [↩] [RCL] ['] [X] [↩] [RCL]
Set states, flag 63 clear		MUSE MCAL
Set states, flag 63 set		[↩] [X] [↩] [X]

- On page 33, replace the next-to-last paragraph with:

If you accidentally enter a value in the wrong variable and its menu label turns black, you should change the label back to white—unless you intend to enter a value for that variable too. There are two ways to make the label white depending on the state of flag 63. If flag 63 is clear (its default state), press ['], the menu key, and MCAL (on the last menu page). If flag 63 is set, press [↩], then the menu key for the variable.

- On page 34, replace the second bulleted item in the Note with:

Change the menu label to white as follows: If flag 63 is clear (its default state), press ['], the menu key for the variable, and MCAL (on the last menu page). If flag 63 is set, press [↩], then the menu key for the variable.

- On page 35, replace the example keystrokes related to the bottom display with:

Flag 63 clear (default): [NXT] [↩] [V0] [V0]

Flag 63 set: [NXT] [↩] [V0]

- On page 76, change the variable values in the example as follows:

Remove D2 as a given. Change solved-for values to  $Q=10602.8752\_ft^3/min$ ,  $M=678584.0132\_lb/min$ ,

$v_2=122.4213\text{ ft/s}$ ,  $A_2=207.8633\text{ in}^2$ . Add  $D_2=16.2684\text{ in}$  as another solved-for value. The other values remain unchanged.

- On page 77, change the variable values in the example as follows:

Remove  $D_2$  as a given. Change solved-for values to  $Q=18849.5559\text{ ft}^3/\text{min}$ ,  $M=1206371.5790\text{ lb}/\text{min}$ ,  $v_2=93.1269\text{ ft/s}$ ,  $A_2=485.7773\text{ in}^2$ . Add  $D_2=24.8699\text{ in}$  as another solved-for value. The other values remain unchanged.

- At the top of page 110, change two of the four equations as shown below to be more accurate for thick-walled rings:

$$I = \frac{\pi}{4} \cdot (ro^4 - ri^4)$$













$$J = \frac{\pi}{2} \cdot (ro^4 - ri^4)$$

- At the top of page 110, change the following values to:

$I=1.7038\text{E}-10\text{ mm}^4$ ,  $J=3.4076\text{E}-10\text{ mm}^4$ ,  
 $I_d=3.6800\text{E}-10\text{ mm}^4$







- On page 175, replace the table entry for “Recall value” with:

#### Solver Menu Keys

Operation	Key	Action
Recall value, flag 63 clear	   	Recalls value of variable to stack.
Recall value, flag 63 set	       	Recalls value of variable to stack.

- On page 182, replace the second set of keystrokes in the example with:

Flag 63 clear:  6   

Flag 63 set:  6     

- On page 188, replace the first sentence with:

The Utilities application consists of the Tetris and Minehunt games, four user-defined units, and eight additional commands.

- On pages 188 and 189, add the following entry to the table:

### Utilities Commands and Units

Key	Programmable Command	Description
TETRI	TETRIS	Starts the Tetris game.

- On pages 211 and 212, add the following entry to the table:

### Commands and Units

Name	Description	Chapter
TETRIS	Starts the Tetris game.	8

- At the middle of page 212, replace the paragraph with:

The application card uses five reserved variables to store information. *MHpar*, *Mpar*, *PTpar*, and *TETpar* are type 26 objects (Library Data), which you can't edit.

- At the bottom of page 212, add the following entry to the table:

### Reserved Variables

Variable	Purpose
<i>TETpar</i>	Stores the Tetris game status.

- On page 213, change the first sentence to:

The application card uses four user flags.

- On page 213, add the following entry to the top table:

### User Flag Definitions

Flag	Name	Clear	Set
63	State Change	Right-shift recalls	Right-shift changes state

- On pages 216 and 217, add the following entry to the table:

**Messages Listed Alphabetically**

Message	Meaning	# (hex)
Keyword conflict	Another library object contains keywords used in the equation.	None

- On page 218, add the following section to the table:

**Messages Listed Numerically**

# (hex)	Message
<b>Equation Library Message</b>	
None	Keyword conflict