HEWLETT-PACKARD

HP-41

USERS’ LIBRARY SOLUTIONS

1982 Taxes
NOTICE

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INTRODUCTION

This HP-41C Solutionsbook was written to help you get the most from your calculator. The programs were chosen to provide useful calculations for many of the common problems encountered.

They will provide you with immediate capabilities in your everyday calculations and you will find them useful as guides to programming techniques for writing your own customized software. The comments on each program listing describe the approach used to reach the solution and help you follow the programmer's logic as you become and expert on your HP calculator.

KEYING A PROGRAM INTO THE HP-41C

There are several things that you should keep in mind while you are keying in programs from the program listings provided in this book. The output from the HP 82143A printer provides a convenient way of listing and an easily understood method of keying in programs without showing every keystroke. This type of output is what appears in this handbook. Once you understand the procedure for keying programs in from the printed listings, you will find this method simple and fast. Here is the procedure:

1. At the end of each program listing is a listing of status information required to properly execute that program. Included is the SIZE allocation required. Before you begin keying in the program, press \[x]\[\alpha\] SIZE \[\alpha\] and specify the allocation (three digits; e.g., 10 should be specified as 010).
   Also included in the status information is the display format and status of flags important to the program. To ensure proper execution, check to see that the display status of the HP-41C is set as specified and check to see that all applicable flags are set or clear as specified.

2. Set the HP-41C to PRGM mode (press the \[\text{PRGM}\] key) and press \[\text{GTO} \lav[\text{<} \lav[\text{=}]\] to prepare the calculator for the new program.

3. Begin keying in the program. Following is a list of hints that will help you when you key in your programs from the program listings in this handbook.
   a. When you see " (quote marks) around a character or group of characters in the program listing, those characters are ALPHA. To key them in, simply press \[\text{ALPHA}\], key in the characters, then press \[\text{ALPHA}\] again. So "SAMPLE" would be keyed in as \[\text{ALPHA} \" SAMPLE \text{ALPHA}\].
   b. The diamond in front of each LBL instruction is only a visual aid to help you locate labels in the program listings. When you key in a program, ignore the diamond.
   c. The printer indication of divide sign is \(/\). When you see \(/\) in the program listing, press \[\text{+}\].
   d. The printer indication of the multiply sign is \(\times\). When you see \(\times\) in the program listing, press \[\times\].
   e. The \(\text{L}\) character in the program listing is an indication of the \[\text{APPEND}\] function. When you see \(\text{L}\), press \[\text{APPEND}\] in ALPHA mode (press \[\text{ALPHA}\] and the K key).
   f. All operations requiring register addresses accept those addresses in these forms:

\begin{align*}
\text{nn} & \text{ (a two-digit number)} \\
\text{IND} \text{nn} & \text{ (INDIRECT: \[\text{\#}\], followed by a two-digit number)} \\
\text{X, Y, Z, T, or L} & \text{ (a STACK address: \[\text{\#}\] followed by X, Y, Z, T, or L)} \\
\text{IND X, Y, Z, T or L} & \text{ (INDIRECT stack: \[\text{\#}\] followed by X, Y, Z, T, or L)}
\end{align*}

Indirect addresses are specified by pressing \[\text{\#}\] and then the indirect address. Stack addresses are specified by pressing \[\text{\#}\] followed by X, Y, Z, T, or L. Indirect stack addresses are specified by pressing \[\text{\#}\] \[\text{\#}\] and X, Y, Z, T, or L.

\begin{table}
<table>
<thead>
<tr>
<th>Printer Listing</th>
<th>Keystrokes</th>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>\text{01} LBL &quot;SAMP\text{LE}&quot;</td>
<td>\text{# LBL} \text{# ALPH} \text{# SAMPLE} \text{# ALPH}</td>
<td>\text{01} \text{LBJ} \text{# SAMPLE}</td>
</tr>
<tr>
<td>\text{02} &quot;\text{THI\text{S IS A} &quot;}</td>
<td>\text{# ALPH} \text{# APPEND} \text{# SAMPLE} \text{# ALPH}</td>
<td>\text{02} \text{# THIS IS A}</td>
</tr>
<tr>
<td>\text{03} &quot;\text{}}&quot;</td>
<td>\text{# AVIEW} \text{# ALPH}</td>
<td>\text{03} \text{# # SAMPLE}</td>
</tr>
<tr>
<td>\text{04} AVIEW</td>
<td>\text{# AVIEW} \text{# ALPH}</td>
<td>\text{04} \text{AVIEW}</td>
</tr>
<tr>
<td>\text{05} 6</td>
<td></td>
<td>\text{05} \text{# 6}</td>
</tr>
<tr>
<td>\text{06} \text{ENTER}</td>
<td></td>
<td>\text{06} \text{# ENTER}</td>
</tr>
<tr>
<td>\text{07} \text{-2}</td>
<td></td>
<td>\text{07} \text{-2}</td>
</tr>
<tr>
<td>\text{08} \text{#}</td>
<td></td>
<td>\text{08} \text{#}</td>
</tr>
<tr>
<td>\text{09} \text{ABS}</td>
<td></td>
<td>\text{09} \text{ABS}</td>
</tr>
<tr>
<td>\text{10} \text{STO} \text{IND L}</td>
<td></td>
<td>\text{10} \text{STO} \text{IND L}</td>
</tr>
<tr>
<td>\text{11} \text{&quot;R3=}&quot;</td>
<td></td>
<td>\text{11} \text{# R3=}</td>
</tr>
<tr>
<td>\text{12} \text{ARCL} \text{# 03}</td>
<td></td>
<td>\text{12} \text{ARCL # 03}</td>
</tr>
<tr>
<td>\text{13} \text{AVIEW}</td>
<td></td>
<td>\text{13} \text{AVIEW}</td>
</tr>
<tr>
<td>\text{14} \text{RTN}</td>
<td></td>
<td>\text{14} \text{RTN}</td>
</tr>
</tbody>
</table>
\end{table}
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All programs are based on original code written by Anthony A. Vertuno
PROGRAM DESCRIPTION

FORM 1040

PURPOSE -

The purpose of this program is to aid the user in completing U. S. Individual Income Tax Form 1040.

FEATURES/WARNINGS -

The program is relatively straightforward in its operation. Once begun, it steps through the tax form displaying values it assumes to be correct for each line of the form.

Lines that require input from the user are denoted by a colon (":"), between the line name (a string of five characters) and the current line value (some number). An example of a line of this type is "STATS: 2.", where "STATS" is an abbreviation for "Filing Status", the colon indicates that this is a user-specified value, and the "2." is the current value. At any time the user encounters a program display similar to the one just described, its line value may be changed simply by keying in some new value (using the numeric keys) and pressing [R/S] (to continue the program). Manual calculations may be performed at this time using the HP-41's stack in order to arrive at the desired value to be input.

Lines that represent values calculated by the program, and which should be copied to the form, are denoted by an equal sign ("=") between the line name and the line value. An example of this is "NETDV= 545.", where "NETDV" is an abbreviation for "Net Dividends", the equal sign indicates that this is a program-calculated value, and "545." is the current line value. At any time a program display similar to the one just described is encountered, its line value MUST NOT be changed by the user (i.e., by pressing any key other than [R/S]), or the program may perform calculations based on the altered (and incorrect) value.

Not all form 1040 lines have been included in the program. The lines omitted have been so in order to leave space in the computer for programs from this package. The lines omitted were chosen because of their (hopefully) limited use. If the user finds that he/she requires one of the omitted items, in all cases the value may be added into a neighboring, existing line item with no ill effect on the "bottom line" results. For example, all deleted line items under "Income" could be totalled by the user and added to line 21 (other income).

The following form 1040 lines have been omitted but may be combined with neighboring lines if needed:
Line 11: alimony received,
Line 14: 40% capital gains distributions,
Line 15: supplemental gains or losses,
Line 16: fully taxable pensions,
Line 17: other pensions/taxable amount,
Line 19: farm income or loss,
Line 20: unemployment compensation/taxable amount,
Line 24: employee business expenses,
Line 26: payments to a Keogh,
Line 27: penalty on early withdrawal of savings,
Line 28: alimony paid,
Line 30: disability income exclusion,
Lines 41 through 48: credits,
Lines 51 through 58: other taxes,
Lines 60 through 66: payments.

The program works equally well in any display mode (FIX, SCI, ENG, 0 through 9), but best results will be obtained using either FIX 0 or 2 which correspond to whole dollar amounts and dollars-and-cents amounts respectively. Money values may be entered in either fashion regardless of the display mode and will be remembered by the program exactly as they are input. However, the display mode does have an effect on the program's output. All output values will be generated using the input values rounded to the current display mode (viz., an input of 9.25 in FIX 0 will be rounded to 9 before it is used in a calculation whereas the same value in FIX 2 will not be altered), and will cause small but perhaps significant deviations in output. The fact that the input values are stored unchanged allows the user to run the program again with the same inputs in another display mode and see the difference between using whole dollar and dollars-and-cents values.

The program does no error checking! All input values are assumed to be correct, regardless of their values, and are used as such. Erroneous values will usually not halt the program. The program may either be run to completion, or manually halted and restarted. Either way, the valid inputs may be skipped by pressing [R/S] and the invalid inputs corrected by entering the proper value when the line is displayed.

Two other forms may be completed while in the process of completing form 1040. These are Schedule A (Itemized Deductions) and Schedule G (Income Averaging). The program will ask the user if either of the form-completing programs is desired. If the user answers in the affirmative, the corresponding program must have already been loaded into the computer or the form 1040 program halt with the fatal error "NONEXISTENT". If this occurs, the user's only recourse is to load the missing program (if desired) and to restart the 1040 program. If the programs exist in memory, and the user answers yes to the proper questions, the required programs will be executed and, at their respective terminations, the 1040 program will be continued. The above-described option is meant only as a convenience. If the user prefers to complete each form independent of the others, he or she may.
The program is compatible with printers. If a printer is attached, the program assumes it is on. All input values are echoed and all output values are streamed to the printer. With respect to the user, input values are treated in the same fashion regardless of the printer's presence. The output of program-generated values, on the other hand, differs dramatically based on the printer's existence. Without a printer, the program halts at each output value in the same fashion that it does when asking for input thus allowing the user to record the value. With a printer, program-generated output does not halt program execution, is not displayed, and is recorded on the printer, thus minimizing user interaction.

One feature of the program allows the user to skip all input prompts if the existing values are known to be correct. In this mode, the user without a printer may view only those lines calculated by the program. The user with a printer may rapidly generate an uninterrupted printout of both input and output. This mode is active when the flag 0 annunciator is lit in the display.
SAMPLE PROBLEM

Fill out the form on pages 7 and 8:

The following example assumes:

* that programs "FT" (form 1040), "T2" (1982 tax rate), and "0" (common subroutines) have been loaded into memory.

* there are 29 available data registers (i.e., SIZE has been set to a number greater than 28).

* the program is in "input mode." This is accomplished by pressing [XEQ] "P" repeatedly (no more than twice is necessary) until the annunciator for flag 0 cannot be seen in the display.

* all pertinent data registers contain the value 0. This is only for convenience in describing the example and is not required. If the user desires to duplicate the example exactly, and is certain that no important data will be destroyed, the computer's CLRG function may be employed to clear data memory (via [XEQ] "CLRG").

* the display mode is FIX 0.

* flags 28 and 29 are set (HP-41 decimal point and digit grouping flags).

SOLUTION

<table>
<thead>
<tr>
<th>DISPLAY</th>
<th>INPUT</th>
<th>KEYSTROKES</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>[XEQ] &quot;FT&quot;</td>
<td>[R/S]*</td>
<td>Identifies the program.</td>
<td></td>
</tr>
<tr>
<td>STATS: 0.</td>
<td>2</td>
<td>[R/S]</td>
<td>Lines 1-5, filing status.</td>
</tr>
<tr>
<td>EXMPT: 0.</td>
<td>4</td>
<td>[R/S]</td>
<td>Line 6e, total number of exemptions claimed.</td>
</tr>
<tr>
<td>WAGES: 0.</td>
<td>28647</td>
<td>[R/S]</td>
<td>Line 7, Wages, salaries, tips, etc.</td>
</tr>
<tr>
<td>INT : 0.</td>
<td>428</td>
<td>[R/S]</td>
<td>Line 8, interest income.</td>
</tr>
<tr>
<td>DIVID: 0.</td>
<td>745</td>
<td>[R/S]</td>
<td>Line 9a, dividends.</td>
</tr>
<tr>
<td>EXCLN: 0.</td>
<td>200</td>
<td>[R/S]</td>
<td>Line 9b, exclusion.</td>
</tr>
<tr>
<td>NETDV= 545.</td>
<td>[R/S]*</td>
<td>Line 9c, the difference between 9a and 9b.</td>
<td></td>
</tr>
<tr>
<td>STRFD: 0.</td>
<td>254</td>
<td>[R/S]</td>
<td>Line 10, State and local income tax refunds.</td>
</tr>
<tr>
<td>SCH C: 0.</td>
<td>[R/S]</td>
<td>Line 12, business income or loss.</td>
<td></td>
</tr>
<tr>
<td>SCH D: 0.</td>
<td>[R/S]</td>
<td>Line 13, capital gain or loss</td>
<td></td>
</tr>
<tr>
<td>DISPLAY</td>
<td>INPUT</td>
<td>KEYSTROKES</td>
<td>COMMENTS</td>
</tr>
<tr>
<td>---------</td>
<td>-------</td>
<td>------------</td>
<td>----------</td>
</tr>
<tr>
<td>SCH E: 0.</td>
<td>8633</td>
<td>[R/S]</td>
<td>Line 18, rents, royalties, partnerships, estates, trusts, etc.</td>
</tr>
<tr>
<td>OTHIN: 0.</td>
<td>285</td>
<td>[R/S]</td>
<td>Line 21, other income.</td>
</tr>
<tr>
<td>TOTIN= 38,792.</td>
<td></td>
<td>[R/S]*</td>
<td>Line 22, total income.</td>
</tr>
<tr>
<td>EXPNS: 0.</td>
<td></td>
<td>[R/S]</td>
<td>Line 23, moving expense.</td>
</tr>
<tr>
<td>IRA : 0.</td>
<td>2000</td>
<td>[R/S]</td>
<td>Line 25, payments to an IRA.</td>
</tr>
<tr>
<td>SCH W: 0.</td>
<td>348</td>
<td>[R/S]</td>
<td>Line 29, deduction for a married couple when both work.</td>
</tr>
<tr>
<td>TOTAD= 2,348.</td>
<td></td>
<td>[R/S]*</td>
<td>Line 31, total adjustments.</td>
</tr>
<tr>
<td>AGI = 36,444.</td>
<td></td>
<td>[R/S]*</td>
<td>Line 32, adjusted gross income.</td>
</tr>
<tr>
<td>SCHED A ?</td>
<td></td>
<td>[R/S]</td>
<td>This query comes up in ALPHA mode. Pressing &quot;Y&quot; causes the program to try to execute the Schedule A program. Any other response continues the current program.</td>
</tr>
<tr>
<td>DEDCT: 0.</td>
<td>2707</td>
<td>[R/S]</td>
<td>Line 34a, itemized deductions. If the Schedule A program was not run, this is a prompt for input. If the Schedule A program was run, this value will be output (i.e., &quot;DEDCT= x&quot;).</td>
</tr>
<tr>
<td>LIN35= 33,737.</td>
<td></td>
<td>[R/S]*</td>
<td>Line 35, the difference between lines 33 and 34.</td>
</tr>
<tr>
<td>EXMP$= 4,000.</td>
<td></td>
<td>[R/S]*</td>
<td>Line 36, line 4e x 1000.</td>
</tr>
<tr>
<td>TXABL= 29,737.</td>
<td></td>
<td>[R/S]*</td>
<td>Line 37, taxable income.</td>
</tr>
<tr>
<td>TX82T= 5,523.</td>
<td></td>
<td>[R/S]</td>
<td>Line 38, 1982 tax. If program &quot;T3&quot; were loaded instead of &quot;T2&quot; the line name would read &quot;83&quot; instead of &quot;82&quot;. The final &quot;T&quot; indicates that the value was extracted from the tax tables. If the tables could not be used, the &quot;T&quot; would be omitted.</td>
</tr>
<tr>
<td>SCHED G ?</td>
<td></td>
<td>[R/S]</td>
<td>This query comes up in ALPHA mode. Pressing &quot;Y&quot; causes the program to try to execute the Schedule G program. Any other response continues the current program.</td>
</tr>
<tr>
<td>CRDIT: 0.</td>
<td>124</td>
<td>[R/S]</td>
<td>Line 49, total credits.</td>
</tr>
<tr>
<td>NETTX= 5,399.</td>
<td></td>
<td>[R/S]*</td>
<td>Line 50, the difference between lines 40 and 49.</td>
</tr>
<tr>
<td>OTHTX: 0.</td>
<td></td>
<td>[R/S]</td>
<td>The total of lines 51 through 58.</td>
</tr>
<tr>
<td>DISPLAY</td>
<td>INPUT</td>
<td>KEystrokes</td>
<td>COMMENTS</td>
</tr>
<tr>
<td>-----------</td>
<td>---------</td>
<td>------------</td>
<td>----------</td>
</tr>
<tr>
<td>TOTTX= 5,399.</td>
<td>[R/S]*</td>
<td></td>
<td>Line 59, total tax. The sum of lines 50 through 58.</td>
</tr>
<tr>
<td>TOTPD: 0.</td>
<td>5323</td>
<td>[R/S]</td>
<td>Line 67, total tax paid. The sum of lines 60 through 66.</td>
</tr>
<tr>
<td>BLDUE= 76.</td>
<td>[R/S]*</td>
<td></td>
<td>Line 71, the amount you owe. If line 67 were greater than line 59, this value would be line 68, the amount overpaid, and would read &quot;REFND= x&quot;. This is a superfluous value left in the X-register.</td>
</tr>
</tbody>
</table>

* [R/S] in this instance is not necessary if a printer is attached.
Form 1040
Department of the Treasury—Internal Revenue Service
U.S. Individual Income Tax Return
1982

For the year January 1–December 31, 1982, or other tax year beginning , 1982, ending , 19

OMB No. 1545-0074

Use IRS label. Otherwise, please print or type.

Your first name and initial (if joint return, also give spouse’s name and initial)  
Last name

Your social security number  
Spouse’s social security no.

Present home address (Number and street, including apartment number, or rural route)  
City, town or post office, State and ZIP code

Do you want $1 to go to this fund?  
Yes  No

If joint return, does your spouse want $1 to go to this fund?  
Yes  No

Note: Checking “Yes” will not increase your tax or reduce your refund.

Presidential Election Campaign

For Privacy Act and Paperwork Reduction Act Notice, see Instructions.

Filing Status

Check only one box.

1 Single
2 Married filing joint return (even if only one had income)
3 Married filing separate return. Enter spouse’s social security no. above and full name here
4 Head of household (with qualifying person). (See page 6 of Instructions.) If the qualifying person is your unmarried child but not your dependent, enter child’s name
5 Qualifying widow(er) with dependent child (Year spouse died )

Exemptions

Always check the box labeled Yourself. Check other boxes if they apply.

6a Yourself  
6b Spouse  
6c First names of your dependent children who lived with you

7 Wages, salaries, tips, etc.  
8 Interest income (attach Schedule B if over $400 or you have any All-Savers interest)  
9a Dividends (attach Schedule B if over $400)  
9b Exclusion

10 Refunds of State and local income taxes (do not enter an amount unless you deducted those taxes in an earlier year—see page 9 of Instructions).
11 Alimony received
12 Business income or (loss) (attach Schedule C)  
13 Capital gain or (loss) (attach Schedule D)  
14 40% capital gain distributions not reported on line 13 (See page 9 of Instructions)  
15 Supplemental gains or (losses) (attach Form 4797)
16 Fully taxable pensions, IRA distributions, and annuities not reported on line 17
17a Other pensions and annuities. Total received
17b Taxable amount, if any, from worksheet on page 10 of Instructions
18 Rents, royalties, partnerships, estates, trusts, etc. (attach Schedule E)  
19 Farm income or (loss) (attach Schedule F)  
20a Unemployment compensation (insurance). Total received
20b Taxable amount, if any, from worksheet on page 10 of Instructions
21 Other income (state nature and source—see page 10 of Instructions)  
22 Total income. Add amounts in column for lines 7 through 21

Adjustments to Income

(See Instructions on page 11)

23 Moving expense (attach Form 3903 or 3903F)  
24 Employee business expenses (attach Form 2106)  
25 Payments to an IRA. You must enter code from page 11 (......)  
26 Payments to a Keogh (H.R. 10) retirement plan  
27 Penalty on early withdrawal of savings
28 Alimony paid
29 Deduction for a married couple when both work (attach Schedule W)
30 Disability income exclusion (attach Form 2440)
31 Total adjustments. Add lines 23 through 30

Adjusted Gross Income

Remove line 31 from line 22. If this line is less than $10,000, see “Earned Income Credit” (line 62) on page 15 of Instructions. If you want IRS to figure your tax, see page 3 of Instructions

Total income. Add amounts in column for lines 7 through 21  
Adjusted gross income  

23 0  
24 2,000  
25 2,000  
26 348  
31 2,348  
32 36,444
## Tax Computation

<table>
<thead>
<tr>
<th>Line</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>33</td>
<td>Amount from line 32 (adjusted gross income)</td>
<td>$36,444</td>
</tr>
<tr>
<td>34a</td>
<td>If you itemize, complete Schedule A (Form 1040) and enter the amount from Schedule A, line 30. <strong>Caution:</strong> If you have unearned income and can be claimed as a dependent on your parent’s return, check here and see page 12 of the Instructions. Also see page 12 of the Instructions if: ○ You are married filing a separate return and your spouse itemizes deductions, OR ○ You file Form 4553, OR ○ You are a dual-status alien.</td>
<td>$2,707</td>
</tr>
<tr>
<td>34b</td>
<td>If you do not itemize, complete the worksheet on page 13. Then enter the allowable part of your charitable contributions here</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Subtract line 34a or 34b, whichever applies, from line 33</td>
<td>$33,737</td>
</tr>
<tr>
<td>36</td>
<td>Multiply $1,000 by the total number of exemptions claimed on Form 1040, line 6e</td>
<td>$4,000</td>
</tr>
<tr>
<td>37</td>
<td>Taxable income. Subtract line 36 from line 35</td>
<td>$29,737</td>
</tr>
<tr>
<td>38</td>
<td>Tax. Enter tax here and check if from [ ] Tax Table, [ ] Tax Rate Schedule X, Y, or Z, or [ ] Schedule G</td>
<td>$5,523</td>
</tr>
<tr>
<td>39</td>
<td>Additional Taxes. Enter here and check if from [ ] Form 4970, [ ] Form 4972, [ ] Form 5454, or [ ] section 72 penalty taxes.</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>Total. Add lines 38 and 39</td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>Credit for the elderly (attach Schedules R &amp; R-P)</td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>Foreign tax credit (attach Form 1116)</td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>Investment credit (attach Form 3468)</td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>Partial credit for political contributions</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>Credit for child and dependent care expenses (attach Form 2441)</td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>Jobs credit (attach Form 5884)</td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>Residential energy credit (attach Form 5695)</td>
<td></td>
</tr>
<tr>
<td>48</td>
<td>Other credits—see page 14</td>
<td></td>
</tr>
<tr>
<td>49</td>
<td>Total credits. Add lines 41 through 48</td>
<td>$1,243</td>
</tr>
<tr>
<td>50</td>
<td>Balance. Subtract line 49 from line 40 and enter difference (but not less than zero).</td>
<td>$5,399</td>
</tr>
<tr>
<td>51</td>
<td>Self-employment tax (attach Schedule SE)</td>
<td></td>
</tr>
<tr>
<td>52</td>
<td>Minimum tax (attach Form 4625)</td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>Alternative minimum tax (attach Form 6251)</td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>Tax from recapture of investment credit (attach Form 4255)</td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>Social security (FICA) tax on tip income not reported to employer (attach Form 4137)</td>
<td></td>
</tr>
<tr>
<td>56</td>
<td>Uncollected employee FICA and RRTA tax on tips (from Form W-2)</td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>Tax on an IRA (attach Form 5329)</td>
<td></td>
</tr>
<tr>
<td>58</td>
<td>Advance earned income credit (EIC) payments received (from Form W-2)</td>
<td></td>
</tr>
<tr>
<td>59</td>
<td>Total tax. Add lines 50 through 58</td>
<td>$5,399</td>
</tr>
<tr>
<td>60</td>
<td>Total Federal income tax withheld</td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>1982 estimated tax payments and amount applied from 1981 return</td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>Earned income credit. If line 33 is under $10,000, see page 15 of Instructions</td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>Amount paid with Form 4868</td>
<td></td>
</tr>
<tr>
<td>64</td>
<td>Excess FICA and RRTA tax withheld (two or more employers)</td>
<td></td>
</tr>
<tr>
<td>65</td>
<td>Credit for Federal tax on special fuels and oils (attach Form 4136)</td>
<td></td>
</tr>
<tr>
<td>66</td>
<td>Regulated Investment Company credit (attach Form 2439)</td>
<td></td>
</tr>
<tr>
<td>67</td>
<td>Total. Add lines 60 through 66</td>
<td>$5,323</td>
</tr>
<tr>
<td>68</td>
<td>If line 67 is larger than line 59, enter amount OVERPAID</td>
<td></td>
</tr>
<tr>
<td>69</td>
<td>Amount of line 68 to be REFUNDED TO YOU</td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>Amount of line 68 to be applied to your 1983 estimated tax</td>
<td></td>
</tr>
<tr>
<td>71</td>
<td>If line 59 is larger than line 67, enter AMOUNT YOU OWE. Attach check or money order for full amount payable to Internal Revenue Service. Write your social security number and “1982 Form 1040” on it.</td>
<td>$76</td>
</tr>
</tbody>
</table>

---

Please Sign Here

Your signature

Date

Spouse’s signature (if filing jointly, both must sign)

Preparer’s signature

Date

Check if self-employed

Preparer’s social security no.

Firm’s name (or yours, if self-employed)

and address

EIN No.

ZIP code
<table>
<thead>
<tr>
<th>INSTRUCTIONS</th>
<th>INPUT</th>
<th>KEYSTROKES</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. At a minimum, load the following programs: &quot;FT&quot; (form 1040)</td>
<td></td>
<td>[shift][GTO] ..</td>
<td></td>
</tr>
<tr>
<td>&quot;T2&quot; ('82 tax tables) or</td>
<td></td>
<td>[shift][GTO] ..</td>
<td></td>
</tr>
<tr>
<td>&quot;T3&quot; ('83 tax tables)</td>
<td></td>
<td>[shift][GTO] ..</td>
<td></td>
</tr>
<tr>
<td>&quot;O&quot; (misc. routines).</td>
<td></td>
<td>[shift][GTO] ..</td>
<td></td>
</tr>
<tr>
<td>2. Allocate data registers (minimum 29).</td>
<td></td>
<td>[XEQ] &quot;SIZE&quot; 029</td>
<td></td>
</tr>
<tr>
<td>3. Select an appropriate display format.</td>
<td></td>
<td>[shift][FIX] n</td>
<td></td>
</tr>
<tr>
<td>4. Select either &quot;prompting&quot; (flag 0 set) or &quot;non-prompting&quot; (flag 0 clear) mode. Pressing [XEQ] &quot;P&quot; toggles between these modes.</td>
<td></td>
<td>[XEQ] &quot;P&quot;</td>
<td></td>
</tr>
<tr>
<td>5. Run the 1040 program.</td>
<td></td>
<td>[XEQ] &quot;FT&quot; FORM 1040</td>
<td></td>
</tr>
<tr>
<td>6. This display identifies the program.</td>
<td></td>
<td>[R/S]* STATS: x</td>
<td></td>
</tr>
<tr>
<td>7. Enter one of lines 1-5: your filing status.</td>
<td>status</td>
<td>[R/S] EXMPT: x</td>
<td></td>
</tr>
<tr>
<td>8. Enter line 6e: total number of exemptions claimed.</td>
<td>exemptions</td>
<td>[R/S] WAGES: x</td>
<td></td>
</tr>
<tr>
<td>9. Enter Line 7: Wages, salaries, tips, etc.</td>
<td>wages</td>
<td>[R/S] INT : x</td>
<td></td>
</tr>
<tr>
<td>10. Enter line 8: interest income.</td>
<td>interest</td>
<td>[R/S] DIVID: x</td>
<td></td>
</tr>
<tr>
<td>11. Enter line 9a: dividends.</td>
<td>dividends</td>
<td>[R/S] EXCLN: x</td>
<td></td>
</tr>
<tr>
<td>12. Enter line 9b: exclusion.</td>
<td>exclusion</td>
<td>[R/S] NETDV= x</td>
<td></td>
</tr>
<tr>
<td>13. Output line 9c, the difference between lines 9a and 9b.</td>
<td>[R/S]*</td>
<td>STRFD: x</td>
<td></td>
</tr>
<tr>
<td>14. Enter line 10: State and local income tax refunds.</td>
<td>refunds</td>
<td>[R/S] SCH C: x</td>
<td></td>
</tr>
<tr>
<td>INSTRUCTIONS</td>
<td>INPUT</td>
<td>KEYSTROKES</td>
<td>DISPLAY</td>
</tr>
<tr>
<td>--------------</td>
<td>-------</td>
<td>------------</td>
<td>---------</td>
</tr>
<tr>
<td>15. Enter line 12: business income or loss. (+ or -)</td>
<td>bus. inc.</td>
<td>[R/S]</td>
<td>SCH C: x</td>
</tr>
<tr>
<td>16. Enter line 13: capital gain or loss. (+ or -)</td>
<td>cap. gain</td>
<td>[R/S]</td>
<td>SCH E: x</td>
</tr>
<tr>
<td>17. Enter line 18: rents, royalties, partnerships, estates, trusts, etc.</td>
<td>rents, etc.</td>
<td>[R/S]</td>
<td>OTHIN: x</td>
</tr>
<tr>
<td>18. Enter line 21: other income.</td>
<td>other inc.</td>
<td>[R/S]</td>
<td>TOTIN= x</td>
</tr>
<tr>
<td>19. Output line 22: total income.</td>
<td></td>
<td>[R/S]*</td>
<td>EXPNS: x</td>
</tr>
<tr>
<td>20. Enter line 23: moving expense.</td>
<td>expense</td>
<td>[R/S]</td>
<td>IRA: x</td>
</tr>
<tr>
<td>21. Enter line 25: payments to an IRA.</td>
<td>IRA payment</td>
<td>[R/S]</td>
<td>SCH W: x</td>
</tr>
<tr>
<td>22. Enter line 29: Deduction for a married couple when both work.</td>
<td>deduction</td>
<td>[R/S]</td>
<td>TOTAD= x</td>
</tr>
<tr>
<td>23. Output line 31: total adjustments to income.</td>
<td></td>
<td>[R/S]*</td>
<td>AGI = x</td>
</tr>
<tr>
<td>24. Output of line 32: adjusted gross income.</td>
<td></td>
<td>[R/S]*</td>
<td>SCHED A ?</td>
</tr>
<tr>
<td>25. This query comes up in ALPHA mode. Pressing &quot;Y&quot; causes the program to try to execute the Schedule A program (see Schedule A program instructions). Any other response continues the current program.</td>
<td>&quot;Y&quot; or any</td>
<td>[R/S]</td>
<td>DEDCT: x</td>
</tr>
<tr>
<td>26. Enter line 34a: itemized deductions. If the Schedule A program was not run, this is a prompt for input. If the Schedule A program was run, the program returns to 1040 at this point and this value will be output (i.e., &quot;DEDCT = x&quot;).</td>
<td>deductions</td>
<td>[R/S]</td>
<td>LIN35= x</td>
</tr>
<tr>
<td>INSTRUCTIONS</td>
<td>INPUT</td>
<td>KEYSEROKES</td>
<td>DISPLAY</td>
</tr>
<tr>
<td>--------------</td>
<td>-------</td>
<td>------------</td>
<td>---------</td>
</tr>
<tr>
<td>27. Output line 35: the difference between lines 33 and 34.</td>
<td>[R/S]*</td>
<td>EXMP$= x</td>
<td></td>
</tr>
<tr>
<td>28. Output line 36: line 4e x 1000.</td>
<td>[R/S]*</td>
<td>TXABL= x</td>
<td></td>
</tr>
<tr>
<td>29. Output line 37: taxable income.</td>
<td>[R/S]*</td>
<td>TX82T= x</td>
<td></td>
</tr>
<tr>
<td>30. Output line 38, 1982 tax. If program &quot;T3&quot; were loaded instead of &quot;T2&quot; the line name would read &quot;83&quot; instead of &quot;82&quot;. The final &quot;T&quot; indicates that the value was extracted from the tax tables. If the tables could not be used, the &quot;T&quot; would be omitted.</td>
<td>[R/S]*</td>
<td>SCHED G ?</td>
<td></td>
</tr>
<tr>
<td>31. This query comes up in ALPHA mode. Pressing &quot;Y&quot; causes the program to try to execute the Schedule G program. Any other response continues the current program. If the Schedule G program was run, control returns to the current program at the User Instruction step 32.</td>
<td>&quot;Y&quot; or any [R/S]</td>
<td>CRDIT: x</td>
<td></td>
</tr>
<tr>
<td>32. Enter line 49: total credits.</td>
<td>total [R/S]</td>
<td>NETTX= x</td>
<td></td>
</tr>
<tr>
<td>33. Output line 50: the difference between lines 40 and 49.</td>
<td>[R/S]*</td>
<td>OTHTX: x</td>
<td></td>
</tr>
<tr>
<td>34. Enter the total of lines 51 through 58.</td>
<td>total [R/S]</td>
<td>TOTTX= x</td>
<td></td>
</tr>
<tr>
<td>35. Output line 59: total tax, the sum of lines 50 through 58.</td>
<td>[R/S]*</td>
<td>TOTPD: x</td>
<td></td>
</tr>
<tr>
<td>36. Enter line 67: total tax paid, the sum of lines 60 through 66.</td>
<td>paid [R/S]</td>
<td>BLDUE= x</td>
<td></td>
</tr>
<tr>
<td>INSTRUCTIONS</td>
<td>INPUT</td>
<td>KEYSTROKES</td>
<td>DISPLAY</td>
</tr>
<tr>
<td>--------------</td>
<td>-------</td>
<td>------------</td>
<td>---------</td>
</tr>
<tr>
<td>37. Output Line 71: the amount you owe. If line 67 were greater than line 59, this value would be line 68, the amount overpaid, and would read &quot;REFND= x&quot;.</td>
<td></td>
<td>[R/S]*</td>
<td>x</td>
</tr>
<tr>
<td>38. This is a superfluous value left in the X-register.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* [R/S] in this instance is not necessary if a printer is attached.
PROGRAM DETAIL -

The form 1040 program is 159 steps and 438 bytes (62.6 registers) long. It requires two other programs, one of the tax table programs and the miscellaneous routines programs. The two tax programs are 332 and 355 bytes each while the routines program is 233 bytes. At a minimum, 29 data registers are needed, totalling 172.3 or 175.6 registers for operation.

The program has one entry point, global label "FT".

Aside from the flags manipulated by the subroutines called, the program itself manipulates the following flags:

- flag 06 : set - to disable the storage feature of routine "S"
- flag 08 : set - to disable the increment feature of routine "S"
- flag 08 : set - indicates the tax table routine was used
  - clear - indicates the tax table routine was not used
    (note that no other routine that uses flag 08 was called during this manipulation)
- flag 10 : cleared, and tested - to determine if the Schedule A program (which sets flag 10) was run
- flag 12 : set - print double wide (for the printed program identifier)

The following data registers are used:

- 00 = register index for data manipulation
- 01 = lines 1 through 5: filing status
- 02 = line 6e: total number of exemptions claimed
- 03 = line 7: wages, salaries, tips, etc.
- 04 = line 8: interest income
- 05 = line 9a: dividends
- 06 = line 9b: exclusion
- 07 = line 10: refunds from state and local income tax
- 08 = line 12: business income or loss
- 09 = line 13: capital gain or loss
- 10 = line 18: rents, royalties, partnerships, estates, trusts, etc.
- 11 = line 21: other income
- 12 = line 22: total income
- 13 = line 23: moving expenses
- 14 = line 25: payments to IRA
- 15 = line 29: deduction for married couple when both work
- 16 = line 31: total adjustments
- 17 = line 32: adjusted gross income
- 18 = line 34: itemized deductions
- 19 = line 35: Line 33 (32) minus line 34
- 20 = line 36: line 4e (exemptions) * 1000
- 21 = line 37: taxable income (line 36 from 35)
- 22 = line 38: tax
- 23 = line 49: total credits
- 24 = lines 51 through 58: other tax
- 25 = line 59: total tax
- 26 = line 67: total paid
- 27 = pointer to a register where a total is currently being accumulated
- 28 = used by tax rate routines (see appropriate routine)
<table>
<thead>
<tr>
<th>LISTING</th>
<th>COMMENTS</th>
<th>LISTING</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 *LBL &quot;FT&quot;</td>
<td>print double wide</td>
<td>52 X&lt;&gt;Y</td>
<td>line 22 - line 31</td>
</tr>
<tr>
<td>02 SF 12</td>
<td>reg. to sum in</td>
<td>53 -</td>
<td></td>
</tr>
<tr>
<td>03 12</td>
<td>title</td>
<td>54 STO 17</td>
<td>output AGI</td>
</tr>
<tr>
<td>04 &quot;FORM 10&quot;</td>
<td></td>
<td>55 XEQ &quot;X&quot;</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td></td>
<td>56 ADV</td>
<td></td>
</tr>
<tr>
<td>05 XEQ &quot;U&quot;</td>
<td>init. routine</td>
<td>57 &quot;A&quot;</td>
<td>schedule A</td>
</tr>
<tr>
<td>06 XEQ &quot;Z&quot;</td>
<td>status prompt</td>
<td>58 XEQ &quot;O&quot;</td>
<td>run schedule A?</td>
</tr>
<tr>
<td>07 &quot;EXMPT&quot;</td>
<td></td>
<td>59 &quot;DEDCT&quot;</td>
<td></td>
</tr>
<tr>
<td>08 XEQ &quot;Z&quot;</td>
<td>exemption prompt</td>
<td>60 FC? 10</td>
<td>no schedule A?</td>
</tr>
<tr>
<td>09 ADV</td>
<td></td>
<td>61 XEQ &quot;Z&quot;</td>
<td>deduction prompt</td>
</tr>
<tr>
<td>10 &quot;WAGES&quot;</td>
<td>wage prompt &amp; sum</td>
<td>62 FC?C 10</td>
<td>no schedule A?</td>
</tr>
<tr>
<td>11 XEQ &quot;Y&quot;</td>
<td></td>
<td>63 GTO 07</td>
<td>skip output</td>
</tr>
<tr>
<td>12 &quot;INT &quot;</td>
<td></td>
<td>64 XEQ &quot;X&quot;</td>
<td>output deductions</td>
</tr>
<tr>
<td>13 XEQ &quot;Y&quot;</td>
<td>int. prompt &amp; sum</td>
<td>65 ADV</td>
<td></td>
</tr>
<tr>
<td>14 &quot;DIVID&quot;</td>
<td></td>
<td>66 XEQ &quot;O&quot;</td>
<td>divide printer</td>
</tr>
<tr>
<td>15 XEQ &quot;Z&quot;</td>
<td>dividend prompt</td>
<td>67 ADV</td>
<td>output</td>
</tr>
<tr>
<td>16 &quot;EXCLN&quot;</td>
<td>exclusion prompt</td>
<td>68 *LBL 07</td>
<td>from step 63</td>
</tr>
<tr>
<td>17 XEQ &quot;Z&quot;</td>
<td></td>
<td>69 &quot;LIN35&quot;</td>
<td>R17 - R18</td>
</tr>
<tr>
<td>18 &quot;NETDV&quot;</td>
<td></td>
<td>70 XEQ &quot;S&quot;</td>
<td>recall exemptions</td>
</tr>
<tr>
<td>19 SF 06</td>
<td>no store &quot;S&quot;</td>
<td>71 &quot;EXMPF&quot;</td>
<td></td>
</tr>
<tr>
<td>20 SF 08</td>
<td>no increment &quot;S&quot;</td>
<td>72 RCL 02</td>
<td></td>
</tr>
<tr>
<td>21 XEQ &quot;S&quot;</td>
<td>output R05-R06</td>
<td>73 RND</td>
<td></td>
</tr>
<tr>
<td>22 &quot;STRFD&quot;</td>
<td>state refund</td>
<td>74 1 E3</td>
<td>1000 * exemptions</td>
</tr>
<tr>
<td>23 XEQ &quot;Y&quot;</td>
<td>prompt &amp; sum</td>
<td>75 *</td>
<td>output line 20</td>
</tr>
<tr>
<td>24 &quot;SCH C&quot;</td>
<td>schedule C</td>
<td>76 STO 20</td>
<td></td>
</tr>
<tr>
<td>25 XEQ &quot;Y&quot;</td>
<td></td>
<td>77 XEQ &quot;X&quot;</td>
<td></td>
</tr>
<tr>
<td>26 &quot;SCH D&quot;</td>
<td>prompt &amp; sum</td>
<td>78 &quot;TXABL&quot;</td>
<td>R19 - R20</td>
</tr>
<tr>
<td>27 XEQ &quot;Y&quot;</td>
<td>schedule D</td>
<td>79 XEQ &quot;S&quot;</td>
<td>if tax = 0</td>
</tr>
<tr>
<td>28 &quot;SCH E&quot;</td>
<td></td>
<td>80 ADV</td>
<td>no taxable?</td>
</tr>
<tr>
<td>29 XEQ &quot;Y&quot;</td>
<td>prompt &amp; sum</td>
<td>81 &quot;TAX &quot;</td>
<td>skip tax calc.</td>
</tr>
<tr>
<td>30 &quot;OTHIN&quot;</td>
<td></td>
<td>82 X=0?</td>
<td>find zero bracket</td>
</tr>
<tr>
<td>31 XEQ &quot;Y&quot;</td>
<td>other income</td>
<td>83 GTO 09</td>
<td>amount</td>
</tr>
<tr>
<td>32 &quot;TOTIN&quot;</td>
<td>prompt &amp; sum</td>
<td>84 XEQ &quot;W&quot;</td>
<td>taxable &lt; zba?</td>
</tr>
<tr>
<td>33 RCL 12</td>
<td>recall total</td>
<td>85 X&lt;&gt;Y</td>
<td>no tax</td>
</tr>
<tr>
<td>34 XEQ &quot;X&quot;</td>
<td>output total</td>
<td>86 X&lt;&gt;Y</td>
<td>no tax?</td>
</tr>
<tr>
<td>35 ADV</td>
<td>new sum register</td>
<td>87 CLX</td>
<td>skip tax calc.</td>
</tr>
<tr>
<td>36 16</td>
<td>store &amp; clear new</td>
<td>88 X=0?</td>
<td>init. tax table</td>
</tr>
<tr>
<td>37 XEQ &quot;T&quot;</td>
<td>sum register</td>
<td>89 GTO 09</td>
<td>flag</td>
</tr>
<tr>
<td>38 &quot;EXPNS&quot;</td>
<td>expenses prompt</td>
<td>90 CF 08</td>
<td>taxable &lt;= 50000?</td>
</tr>
<tr>
<td>39 XEQ &quot;Y&quot;</td>
<td>&amp; sum</td>
<td>91 5 E4</td>
<td>skip tax table</td>
</tr>
<tr>
<td>40 &quot;IRA&quot;</td>
<td>IRA prompt &amp; sum</td>
<td>92 X&lt;&gt;Y</td>
<td>tax table</td>
</tr>
<tr>
<td>41 XEQ &quot;Y&quot;</td>
<td></td>
<td>93 X&lt;&gt;Y</td>
<td>1 in lastx</td>
</tr>
<tr>
<td>42 &quot;SCH W&quot;</td>
<td></td>
<td>94 X&lt;&gt;Y</td>
<td>dummy step</td>
</tr>
<tr>
<td>43 XEQ &quot;Y&quot;</td>
<td>schedule W</td>
<td>95 GTO 06</td>
<td></td>
</tr>
<tr>
<td>44 &quot;TOTAD&quot;</td>
<td>prompt &amp; sum</td>
<td>96 ENTER†</td>
<td></td>
</tr>
<tr>
<td>45 RCL 16</td>
<td>recall total adj.</td>
<td>97 SF 08</td>
<td>tax table</td>
</tr>
<tr>
<td>46 XEQ &quot;X&quot;</td>
<td>output total adj.</td>
<td>98 1</td>
<td>2 in lastx</td>
</tr>
<tr>
<td>47 ADV</td>
<td></td>
<td>99 *</td>
<td></td>
</tr>
<tr>
<td>48 CF 10</td>
<td>init. schedule A</td>
<td>100 3 E3</td>
<td>taxable &gt;= 3000</td>
</tr>
<tr>
<td>49 &quot;AGI &quot;</td>
<td>flag</td>
<td>101 X&lt;&gt;Y?</td>
<td></td>
</tr>
<tr>
<td>50 RCL 12</td>
<td>recall line 22</td>
<td>102 ISG L</td>
<td></td>
</tr>
<tr>
<td>51 RND</td>
<td></td>
<td>103 CLD</td>
<td></td>
</tr>
<tr>
<td>Listing</td>
<td>Comments</td>
<td>Listing</td>
<td>Comments</td>
</tr>
<tr>
<td>---------</td>
<td>----------</td>
<td>---------</td>
<td>----------</td>
</tr>
<tr>
<td>104 RDIN</td>
<td>taxable in x</td>
<td>156 XEQ &quot;X&quot;</td>
<td>output &quot;BLDUE&quot; or &quot;REFND&quot;</td>
</tr>
<tr>
<td>105 LASTX</td>
<td>1 or 2</td>
<td>157 ADV</td>
<td>&quot;REFND&quot;</td>
</tr>
<tr>
<td>106 25</td>
<td></td>
<td>158 ADV</td>
<td></td>
</tr>
<tr>
<td>107 *</td>
<td>25 or 50</td>
<td>159 END</td>
<td></td>
</tr>
<tr>
<td>108 MOD</td>
<td>amt over tax brkt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>109 LASTX</td>
<td>25 or 50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>110 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>111 /</td>
<td>12.5 or 25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>112 RDIN</td>
<td>amt. over tax brkt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>113 -</td>
<td>base of tax brkt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>114 R↑</td>
<td>12.5 or 25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>115 +</td>
<td>mid tax brkt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>116 LBL 06</td>
<td>end of tax table</td>
<td></td>
<td></td>
</tr>
<tr>
<td>117 XEQ &quot;R&quot;</td>
<td>get tax</td>
<td></td>
<td></td>
</tr>
<tr>
<td>118 FC? 08</td>
<td>no tax table?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>119 &quot;−&quot;</td>
<td>omit &quot;T&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>120 FC?C 08</td>
<td>no tax table?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>121 GTO 09</td>
<td>skip rounding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>122 &quot;−T&quot;</td>
<td>add &quot;T&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>123 .5</td>
<td>unconditional</td>
<td></td>
<td></td>
</tr>
<tr>
<td>124 +</td>
<td>round up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>125 INT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>126 LBL 09</td>
<td>end of tax calc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>127 STO 22</td>
<td>store tax</td>
<td></td>
<td></td>
</tr>
<tr>
<td>128 XEQ &quot;X&quot;</td>
<td>output tax</td>
<td></td>
<td></td>
</tr>
<tr>
<td>129 ADV</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>130 &quot;G&quot;</td>
<td>schedule G</td>
<td></td>
<td></td>
</tr>
<tr>
<td>131 XEQ &quot;Q&quot;</td>
<td>run schedule G?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>132 25</td>
<td>new sum register</td>
<td></td>
<td></td>
</tr>
<tr>
<td>133 XEQ &quot;T&quot;</td>
<td>store &amp; clear</td>
<td></td>
<td></td>
</tr>
<tr>
<td>134 &quot;CRDIT&quot;</td>
<td>new sum register</td>
<td></td>
<td></td>
</tr>
<tr>
<td>135 23</td>
<td>adjust index to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>136 STO 00</td>
<td>credit register</td>
<td></td>
<td></td>
</tr>
<tr>
<td>137 XEQ &quot;Z&quot;</td>
<td>credit prompt</td>
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<td></td>
</tr>
<tr>
<td>138 &quot;NETTX&quot;</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>139 SF 06</td>
<td>no store/yes sum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>140 SF 08</td>
<td>no increment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>141 XEQ &quot;S&quot;</td>
<td>tax - credit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>142 &quot;OTHX&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>143 XEQ &quot;Y&quot;</td>
<td>other tax prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>144 &quot;TOTTX&quot; &amp; sum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>145 RCL 25</td>
<td>recall other tax</td>
<td></td>
<td></td>
</tr>
<tr>
<td>146 XEQ &quot;X&quot;</td>
<td>output other tax</td>
<td></td>
<td></td>
</tr>
<tr>
<td>147 &quot;TOTPD&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>148 XEQ &quot;Z&quot;</td>
<td>prompt total paid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>149 &quot;BLDUE&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>150 RCL 25</td>
<td>total tax</td>
<td></td>
<td></td>
</tr>
<tr>
<td>151 RND</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>152 =</td>
<td>paid - total tax</td>
<td></td>
<td></td>
</tr>
<tr>
<td>153 X&gt;0?</td>
<td>more paid?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>154 &quot;REFND&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>155 ABS</td>
<td>positive output</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Row</td>
<td>Start</td>
<td>End</td>
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</tr>
<tr>
<td>-----</td>
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<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
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</tr>
<tr>
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<td>7</td>
<td>19</td>
<td>22</td>
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<td>8</td>
<td>23</td>
<td>26</td>
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<tr>
<td>9</td>
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<td>32</td>
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<td>12</td>
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<td>13</td>
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</tr>
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<td>14</td>
<td>42</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>46</td>
<td>51</td>
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</tr>
<tr>
<td>16</td>
<td>52</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>59</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>63</td>
<td>69</td>
<td></td>
</tr>
</tbody>
</table>
PROGRAM DESCRIPTION

SCHEDULE A
ITEMIZED DEDUCTIONS

PURPOSE -
The purpose of this program is to aid the user in itemizing deductions using Schedule A.

FEATURES/WARNINGS -
The program is relatively straightforward in its operation. Once begun, it steps through the tax form displaying values it assumes to be correct for each line of the form.

Lines that require input from the user are denoted by a colon (":") between the line name (a string of five characters) and the current line value (some number). An example of a line of this type is "STATS: 2.", where "STATS" is an abbreviation for "Filing Status", the colon indicates that this is a user-specified value, and the "2." is the current value. At any time the user encounters a program display similar to the one just described, its line value may be used as is by pressing [R/S] (to continue the program) or may be changed by keying in some new value (using the numeric keys) and pressing [R/S] (to continue the program). Manual calculations may be performed at this time using the HP-41's stack in order to arrive at the desired value to be input.

Lines that represent values calculated by the program, and which should be copied to the form, are denoted by an equal sign ("=") between the line name and the line value. An example of this is "1%AGI= 364.", where "1%AGI" is an abbreviation for "one percent of your adjusted gross income", the equal sign indicates that this is a program-calculated value, and "364." is the current line value. At any time a program display similar to the one just described is encountered, its line value MUST NOT be changed by the user (i.e., by pressing any key other than [R/S]), or the program may perform calculations based on the altered (and incorrect) value.

Not all Schedule A lines have been included in the program. The lines omitted have been so in order to leave space in the computer for other programs from this package. The lines omitted were chosen because of their (hopefully) limited use. If the user finds that he/she requires one of the omitted items, in all cases the value may be added into a neighboring, existing line item with no ill effect on the "bottom line" results. For example, all items under "Contributions" can be totalled by the user and added to line 23.

The following Schedule A lines have been omitted but may be combined with neighboring lines if needed:
Line 13b: general sales on motor vehicles
Line 20: cash contributions
Line 21: contributions other than cash
Line 22: carryover from prior years

The program works equally well in any display mode (FIX, SCI, ENG, 0 through 9), but best results will be obtained using either FIX 0 or 2 which correspond to whole dollar amounts and dollars-and-cents amounts respectively. Money values may be entered in either fashion regardless of the display mode and will be remembered by the program exactly as they are input. However, the display mode does have an effect on the program's output. All output values will be generated using the input values rounded to the current display mode (viz., an input of 9.25 in FIX 0 will be rounded to 9 before it is used in a calculation whereas the same value in FIX 2 will not be altered), and will cause small but perhaps significant deviations in output. The fact that the values are retained exactly as input allows the user to rerun the program with no new inputs in another display mode and quickly see the difference between whole dollar and dollars-and-cents input.

The Schedule A program can be run on its own independent of any programs other than the "common routines" program. It may also be "called" from the 1040 program to complete Schedule A in the process of completing form 1040. If the latter occurs, certain line information will be assumed to have been input or calculated by the calling program. In other words, the Schedule A program will run a little differently (omitting certain inputs, treating others as outputs) when called than when run on its own. These differences will be detailed in the User Instructions.

The program does no error checking! All input values are assumed to be correct, regardless of their values, and are used as such. Erroneous values will usually not halt the program. The program may either be run to completion, or manually halted and restarted. Either way, the valid inputs may be skipped by pressing [R/S] and the invalid inputs corrected by entering the proper value when the line is displayed.

The program is compatible with printers. If a printer is attached, the program assumes it is on. All input values are echoed and all output values are streamed to the printer. With respect to the user, input values are treated in the same fashion regardless of the printer's presence. The output of program-generated values, on the other hand, differs dramatically based on the printer's existence. Without a printer, the program halts at each output value in the same fashion that it does when asking for input, thus allowing the user to manually record the value. With a printer, program-generated output does not halt program execution, is not displayed and is recorded on the printer, thus minimizing user interaction.

One feature of the program allows the user to skip all input prompts if the existing values are known to be correct. In this mode, the user without a printer may view only those lines calculated by the program. The user with a printer may rapidly generate an uninterrupted printout of both input and output. This mode is active when the flag 0 annunciator is lit in the display.
SAMPLE PROBLEM

Fill out the form on page 22.

The example assumes:

* that programs "SA" (Schedule A) and "0" (common subroutines) have been loaded into memory.

* there are 51 available data registers (i.e., SIZE has been set to a number greater than 50).

* the program is in "input mode." This is accomplished by pressing [XEQ] "P" repeatedly (no more than twice is necessary) until the annunciator for flag 0 cannot be seen in the display.

* all pertinent data registers contain the value 0. This is only for convenience in describing the example and is not required. If the user desires to duplicate the example exactly, and is certain that no important data will be destroyed, the computer's CLRG function may be employed to clear data memory (via [XEQ] "CLRG").

* the display mode is FIX 0.

* flags 28 and 29 are set (the HP-41 decimal point and digit grouping flags).

SOLUTION

<table>
<thead>
<tr>
<th>DISPLAY</th>
<th>INPUT</th>
<th>KEYSTROKES</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCHEDULE A</td>
<td>[XEQ] &quot;SA&quot;</td>
<td>Identifies the program.</td>
<td></td>
</tr>
<tr>
<td>STATS: 0.</td>
<td>[R/S]*</td>
<td>Lines 1-5 of form 1040: filing status. If this program was called from the 1040 program, this prompt will be skipped.</td>
<td></td>
</tr>
<tr>
<td>AGI : 0.</td>
<td>2</td>
<td>[R/S]</td>
<td>Line 33 from form 1040: adjusted gross income. If this program was called from the 1040 program, this prompt will be skipped.</td>
</tr>
<tr>
<td>DRUGS: 0.</td>
<td>36444</td>
<td>[R/S]</td>
<td>Line 1: medicine and drugs.</td>
</tr>
<tr>
<td>1%AGI= 364.</td>
<td>412</td>
<td>[R/S]</td>
<td>Line 2: 1% of line 33 form 1040.</td>
</tr>
<tr>
<td>LINE3= 48.</td>
<td>[R/S]*</td>
<td>Line 3: line 2 from line 1.</td>
<td></td>
</tr>
<tr>
<td>MDINS: 0.</td>
<td>372</td>
<td>[R/S]</td>
<td>Line 4: total medical ins. premiums paid for medical and dental.</td>
</tr>
<tr>
<td>DISPLAY</td>
<td>INPUT</td>
<td>KEYSTrokes</td>
<td>COMMENTS</td>
</tr>
<tr>
<td>---------</td>
<td>-------</td>
<td>------------</td>
<td>----------</td>
</tr>
<tr>
<td>DCTRS: 0.</td>
<td>878</td>
<td>[R/S]</td>
<td>Line 5a: doctors, dentists, nurses, hospitals, etc.</td>
</tr>
<tr>
<td>TRNSP: 0.</td>
<td>49</td>
<td>[R/S]</td>
<td>Line 5b: transportation.</td>
</tr>
<tr>
<td>OTHER: 0.</td>
<td>89</td>
<td>[R/S]</td>
<td>Line 5c: other medical expenses.</td>
</tr>
<tr>
<td>LINE6=</td>
<td>1,436.</td>
<td>[R/S]*</td>
<td>Line 6: add lines 3 through 5c.</td>
</tr>
<tr>
<td>3%AGI=</td>
<td>1,093.</td>
<td>[R/S]*</td>
<td>Line 7: 3% of line 33 form 1040.</td>
</tr>
<tr>
<td>LINE8=</td>
<td>343.</td>
<td>[R/S]*</td>
<td>Line 8: line 7 from line 6.</td>
</tr>
<tr>
<td>LINE9=</td>
<td>150.</td>
<td>[R/S]*</td>
<td>Line 9: half of line 4 &lt;= 150</td>
</tr>
<tr>
<td>TOTMD=</td>
<td>343.</td>
<td>[R/S]*</td>
<td>Line 10: larger of lines 8 and 9.</td>
</tr>
<tr>
<td>SLITX: 0.</td>
<td>1373</td>
<td>[R/S]</td>
<td>Line 11: state and local income tax.</td>
</tr>
<tr>
<td>RESTX: 0.</td>
<td>833</td>
<td>[R/S]</td>
<td>Line 12: real estate tax.</td>
</tr>
<tr>
<td>SLSLTX: 0.</td>
<td>325</td>
<td>[R/S]</td>
<td>Line 13: sales tax.</td>
</tr>
<tr>
<td>OTHER: 0.</td>
<td></td>
<td>[R/S]</td>
<td>Line 14: other taxes.</td>
</tr>
<tr>
<td>TOTTX=</td>
<td>2,531.</td>
<td>[R/S]*</td>
<td>Line 15: total tax.</td>
</tr>
<tr>
<td>MORTG: 0.</td>
<td>2377</td>
<td>[R/S]</td>
<td>Line 16: home mortgage interest paid to financial institutions.</td>
</tr>
<tr>
<td>CDTCD: 0.</td>
<td>62</td>
<td>[R/S]</td>
<td>Line 17: credit cards and charge accounts.</td>
</tr>
<tr>
<td>OTHER: 0.</td>
<td></td>
<td>[R/S]</td>
<td>Line 18: other interest expenses.</td>
</tr>
<tr>
<td>TOTIN=</td>
<td>2,439.</td>
<td>[R/S]*</td>
<td>Line 19: total interest expense.</td>
</tr>
<tr>
<td>CNTRB: 0.</td>
<td>560</td>
<td>[R/S]</td>
<td>Line 23: total contributions.</td>
</tr>
<tr>
<td>CSLTY: 0.</td>
<td></td>
<td>[R/S]</td>
<td>Line 24: total casualty or theft loss.</td>
</tr>
<tr>
<td>DUES : 0.</td>
<td>150</td>
<td>[R/S]</td>
<td>Line 25a: union and professional dues.</td>
</tr>
<tr>
<td>TXPRP: 0.</td>
<td>40</td>
<td>[R/S]</td>
<td>Line 25b: tax preparation fee.</td>
</tr>
<tr>
<td>OTHER: 0.</td>
<td>44</td>
<td>[R/S]</td>
<td>Line 26: other miscellaneous deductions.</td>
</tr>
<tr>
<td>TOTMS=</td>
<td>234.</td>
<td>[R/S]*</td>
<td>Line 27: total misc. losses and deductions.</td>
</tr>
<tr>
<td>ZBRAK=</td>
<td>3,400.</td>
<td>[R/S]*</td>
<td>Line 29: zero bracket amount.</td>
</tr>
<tr>
<td>DEDCT=</td>
<td>2,707.</td>
<td>[R/S]*</td>
<td>Line 30: adjusted deductions.</td>
</tr>
</tbody>
</table>

2,707.

* [R/S] in this instance is not necessary if a printer is attached.
# Schedule A—Itemized Deductions

(Do not include expenses reimbursed or paid by others.)

### Medical and Dental Expenses

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Amount</th>
<th>Column 1</th>
<th>Column 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Medicines and drugs</td>
<td>412</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Write 1% of Form 1040, line 33</td>
<td>364</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Subtract line 2 from line 1. If line 2 is more than line 1, write zero</td>
<td>48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Total insurance premiums you paid for medical and dental care</td>
<td>372</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Other medical and dental expenses:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5a</td>
<td>Doctors, dentists, nurses, hospitals, etc</td>
<td>878</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5b</td>
<td>Transportation</td>
<td>49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5c</td>
<td>Other (list—include hearing aids, dentures, eyeglasses, etc.)</td>
<td>89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Add lines 3 through 5c</td>
<td>1,436</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Multiply amount on Form 1040, line 33, by 3% (.03)</td>
<td>1,093</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Subtract line 7 from line 6. If line 7 is more than line 6, write zero</td>
<td>343</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Write one-half of amount on line 4, but not more than $150</td>
<td>150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>COMPARE amounts on line 8 and line 9, and write the LARGER amount here</td>
<td>343</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Taxes

(See page 18 of Instructions.)

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Amount</th>
<th>Column 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>State and local income</td>
<td>1,373</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Real estate</td>
<td>833</td>
<td></td>
</tr>
<tr>
<td>13a</td>
<td>General sales (see sales tax tables)</td>
<td>325</td>
<td></td>
</tr>
<tr>
<td>13b</td>
<td>General sales on motor vehicles</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Other (list—include personal property)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Add lines 11 through 14. Write your answer here</td>
<td>2,531</td>
<td></td>
</tr>
</tbody>
</table>

### Interest Expense

(See page 19 of Instructions.)

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Amount</th>
<th>Column 1</th>
<th>Column 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>16a</td>
<td>Home mortgage interest paid to financial institutions</td>
<td>2,377</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16b</td>
<td>Home mortgage interest paid to individuals (show that person's name and address)</td>
<td>62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Credit cards and charge accounts</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Other (list)</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Add lines 16a through 18. Write your answer here</td>
<td>2,439</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Contributions

(See page 19 of Instructions.)

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Amount</th>
<th>Column 1</th>
<th>Column 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>20a</td>
<td>Cash contributions. (If you gave $3,000 or more to any one organization, report those contributions on line 20b.)</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20b</td>
<td>Cash contributions totaling $3,000 or more to any one organization. (Show to whom you gave and how much you gave.)</td>
<td>560</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Other than cash (see page 19 of Instructions for required statement)</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Carryover from prior years</td>
<td>560</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Add lines 20a through 22. Write your answer here</td>
<td>560</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Casualty and Theft Losses and Miscellaneous Deductions

(See page 20 of Instructions.)

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Amount</th>
<th>Column 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>Total casualty or theft loss(es) (attach Form 4684)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>25a</td>
<td>Union and professional dues</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>25b</td>
<td>Tax return preparation fee</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Other (list)</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Add lines 24 through 26. Write your answer here</td>
<td>234</td>
<td></td>
</tr>
</tbody>
</table>

### Summary of Itemized Deductions

(See page 20 of Instructions.)

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Amount</th>
<th>Column 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>Add lines 10, 15, 19, 23, and 27</td>
<td>6,107</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>If you checked Form 1040, Filing Status box 2 or 5, write $3,400. 1 or 4, write $2,300. 3, write $1,700.</td>
<td>3,400</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Subtract line 29 from line 28. Write your answer here and on Form 1040, line 34a. (If line 29 is more than line 28, see the Instructions for line 30 on page 20.)</td>
<td>2,707</td>
<td></td>
</tr>
</tbody>
</table>

For Paperwork Reduction Act Notice, see Form 1040 Instructions.
**USER INSTRUCTIONS**

<table>
<thead>
<tr>
<th>INSTRUCTIONS</th>
<th>INPUT</th>
<th>KEYSTROKES</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>--------------</td>
<td>-------</td>
<td>------------</td>
<td>---------</td>
</tr>
</tbody>
</table>
| 1) At a minimum, load the following programs:  
"SA" (Schedule A)  
"0" (misc. routines). |       | [shift][GTO] .. |         |
| 2) Allocate data registers (minimum 51). |       | [XEQ] "SIZE" 051 |         |
| 3) Select an appropriate display format. |       | [shift][FIX] n |         |
| 4) Select either "prompting" (flag 0 set) or "non-prompting" (flag 0 clear) mode.  
Pressing [XEQ] "P" toggles between these modes. |       | [XEQ] "P" |         |
| 5) Run the Schedule A program. |       | [XEQ] "SA" | SCHEDULE A |
| 6) This display identifies the program. |       | [R/S]* | STATS: x |
| 7) Enter one of lines 1-5:  
your filing status. If this program was called from the 1040 program, this prompt will be skipped.  
status |       | [R/S] | AGI : x |
| 8) Enter line 33 from form 1040: adjusted gross income.  
If this program was called from the 1040 program, this prompt will be skipped.  
agi |       | [R/S] | DRUGS: x |
| 9) Enter line 1: medicine and drugs.  
drugs |       | [R/S] | 1%AGI= x |
| 10) Output line 2: 1% of line 33 form 1040. |       | [R/S]* | LINE3= x |
| 11) Output line 3: line 2 from line 1. |       | [R/S]* | MDINS: x |
| 12) Input line 4: total medical ins. premiums paid for medical and dental.  
insurance |       | [R/S] | DCTRS: x |
| 13) Input line 5a: doctors, dentists, nurses, hospitals, etc.  
doctors |       | [R/S] | TRNSP: x |
<table>
<thead>
<tr>
<th>INSTRUCTIONS</th>
<th>INPUT</th>
<th>KEYSTROKES</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. Input line 5b: transportation.</td>
<td>transport.</td>
<td>[R/S]</td>
<td>OTHER: x</td>
</tr>
<tr>
<td>15. Input line 5c: other medical expenses.</td>
<td>other exp.</td>
<td>[R/S]</td>
<td>LINE6= x</td>
</tr>
<tr>
<td>16. Output line 6: add lines 3 through 5c.</td>
<td></td>
<td>[R/S]*</td>
<td>3%AGI= x</td>
</tr>
<tr>
<td>17. Output of line 7: 3% of line 33 form 1040.</td>
<td></td>
<td>[R/S]*</td>
<td>LINE8= x</td>
</tr>
<tr>
<td>18. Output of line 8: line 7 from line 6.</td>
<td></td>
<td>[R/S]*</td>
<td>LINE9= x</td>
</tr>
<tr>
<td>19. Output of line 9: half of line 4 &lt;= 150.</td>
<td></td>
<td>[R/S]*</td>
<td>TOTMD= x</td>
</tr>
<tr>
<td>20. Output of line 10: the larger of lines 8 and 9.</td>
<td></td>
<td>[R/S]*</td>
<td>SLITX: x</td>
</tr>
<tr>
<td>21. Enter line 11: state and local income tax.</td>
<td>state tax</td>
<td>[R/S]</td>
<td>RESTX: x</td>
</tr>
<tr>
<td>22. Enter line 12: real estate tax.</td>
<td>re. es. tax</td>
<td>[R/S]</td>
<td>SLSTX: x</td>
</tr>
<tr>
<td>23. Enter line 13: sales tax.</td>
<td>sales tax</td>
<td>[R/S]</td>
<td>OTHER: x</td>
</tr>
<tr>
<td>24. Enter line 14: other taxes.</td>
<td>other tax</td>
<td>[R/S]</td>
<td>TOTTX= x</td>
</tr>
<tr>
<td>25. Output of line 15: total tax.</td>
<td></td>
<td>[R/S]*</td>
<td>MORTG: x</td>
</tr>
<tr>
<td>26. Input line 16: home mortgage interest paid to financial institutions.</td>
<td>mort. int.</td>
<td>[R/S]</td>
<td>CDTCD: x</td>
</tr>
<tr>
<td>27. Input line 17: credit cards and charge accounts.</td>
<td>credit card</td>
<td>[R/S]</td>
<td>OTHER: x</td>
</tr>
<tr>
<td>28. Enter line 18: other interest expenses.</td>
<td>other exp.</td>
<td>[R/S]</td>
<td>TOTIN= x</td>
</tr>
<tr>
<td>29. Output of line 19: total interest expense.</td>
<td></td>
<td>[R/S]*</td>
<td>CNTRB: x</td>
</tr>
<tr>
<td>30. Enter line 23: total contributions.</td>
<td>contrib.</td>
<td>[R/S]</td>
<td>CSLTY: x</td>
</tr>
<tr>
<td>INSTRUCTIONS</td>
<td>INPUT</td>
<td>KEYSTROKES</td>
<td>DISPLAY</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------</td>
<td>------------</td>
<td>---------</td>
</tr>
<tr>
<td>31. Enter line 24: total casualty or theft loss.</td>
<td>casualty</td>
<td>[R/S]</td>
<td>DUES : x</td>
</tr>
<tr>
<td>32. Enter line 25a: union and professional dues.</td>
<td>dues</td>
<td>[R/S]</td>
<td>TXPRP: x</td>
</tr>
<tr>
<td>33. Enter line 25b: tax preparation fee.</td>
<td>tax prep.</td>
<td>[R/S]</td>
<td>OTHER: x</td>
</tr>
<tr>
<td>34. Enter line 26: other miscellaneous deductions.</td>
<td>other misc.</td>
<td>[R/S]</td>
<td>TOTMS= x</td>
</tr>
<tr>
<td>35. Output of line 27: total miscellaneous deductions.</td>
<td></td>
<td>[R/S]*</td>
<td>GRDED= x</td>
</tr>
<tr>
<td>36. Output of line 28: gross deductions.</td>
<td></td>
<td>[R/S]*</td>
<td>ZBRAM= x</td>
</tr>
<tr>
<td>37. Output of line 29: zero bracket amount.</td>
<td></td>
<td>[R/S]*</td>
<td>DEDCT= x</td>
</tr>
<tr>
<td>38. Output of line 30: adjusted deductions.</td>
<td></td>
<td>[R/S]*</td>
<td>x</td>
</tr>
<tr>
<td>If this program was called from the 1040 program, control will be passed back to that program after this display.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39. This is a superfluous value left in the X-register.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* [R/S] in this instance is not necessary if a printer is attached.*
PROGRAM DETAIL -

The form Schedule A program is 142 steps and 432 bytes (61.7 registers) long. It requires one other program: the miscellaneous routines program—233 bytes. At a minimum, 51 data registers are needed, totaling 146 registers for operation.

The program has two entry points, global labels "SA" and "AS". Label "SA" is the user entry point. When the user desires to run the program independent of the 1040 program, this label is accessed. Label "AS" is the entry point for the 1040 program.

Aside from the flags manipulated by the subroutines called, the program itself manipulates the following flags:

flag 06: set - to disable the storage feature of routine "S"
flag 10: set - if the program was called via "AS"
      clear - if the program was called via "SA"
flag 12: set - print double wide (for the printed program identifier)
      clear - print single wide

The data registers used by the form 1040 program are preserved with the exception of registers 1, 17 and 18. These registers are not modified if the program is called from the 1040 program, but can be if the program is run on its own. The following data registers are used:

00 = register index for data manipulation
01 = lines 1 through 5, form 1040: filing status
17 = line 32, form 1040: adjusted gross income
18 = line 33, form 1040: deductions
29 = line 1: medicines and drugs
30 = line 4: total insurance premiums paid
31 = line 5a: doctors, dentists, nurses, hospitals, etc.
32 = line 5b: medical transportation
33 = line 5c: other medical expenses
34 = line 6: total medical expenses
35 = line 11: state and local income tax
36 = line 12: real estate tax
37 = line 13: sales tax
38 = line 14: other taxes
39 = line 15: total tax
40 = line 16: home mortgage interest paid
41 = line 17: credit cards and charge accounts
42 = line 18: other interest expenses
43 = line 19: total interest expense
44 = line 23: total contributions
45 = line 24: total casualty or theft loss
46 = line 25a: union and professional dues
47 = line 25b: tax preparation fee
48 = line 26: other miscellaneous deductions
49 = line 27: total miscellaneous deductions
50 = line 28: total itemized deductions
<table>
<thead>
<tr>
<th>LISTING</th>
<th>COMMENTS</th>
<th>LISTING</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 LBL “SA”</td>
<td>user entry point</td>
<td>52 “LINE8”</td>
<td></td>
</tr>
<tr>
<td>02 CF 10</td>
<td>not a subroutine</td>
<td>53 SF 06</td>
<td>no store</td>
</tr>
<tr>
<td>03 SF 12</td>
<td>double wide print</td>
<td>54 XEQ “S”</td>
<td>line 7 from 6</td>
</tr>
<tr>
<td>04 GTO 00</td>
<td>to step 09</td>
<td>55 “LINE9”</td>
<td></td>
</tr>
<tr>
<td>05 LBL “AS”</td>
<td>sub. entry point</td>
<td>56 RCL 34</td>
<td>line 6</td>
</tr>
<tr>
<td>06 SF 10</td>
<td>subroutine flag</td>
<td>57 RND</td>
<td></td>
</tr>
<tr>
<td>07 CF 12</td>
<td>print single wide</td>
<td>58 2</td>
<td></td>
</tr>
<tr>
<td>08 XEQ “O”</td>
<td>print divider</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>09 LBL 00</td>
<td>sum register</td>
<td>60 150</td>
<td></td>
</tr>
<tr>
<td>10 34</td>
<td>SCHEDULE</td>
<td>61 X&gt;Y?</td>
<td></td>
</tr>
<tr>
<td>11 “SCHEDULE”</td>
<td></td>
<td>62 X&gt;&gt;Y</td>
<td></td>
</tr>
<tr>
<td>12 XEQ “U”</td>
<td>initialize</td>
<td>63 XEQ “X”</td>
<td>output line 9</td>
</tr>
<tr>
<td>13 FC? 10</td>
<td>subroutine?</td>
<td>64 “TOTMD”</td>
<td>line 8</td>
</tr>
<tr>
<td>14 XEQ “Z”</td>
<td>status prompt</td>
<td>65 RCL Z</td>
<td></td>
</tr>
<tr>
<td>15 17</td>
<td>AGI register</td>
<td>66 X&gt;&gt;Y?</td>
<td>line 8 &lt; line 9?</td>
</tr>
<tr>
<td>16 STO 00</td>
<td>reset pointer</td>
<td>67 X&gt;&gt;Y</td>
<td></td>
</tr>
<tr>
<td>17 “AGI”</td>
<td></td>
<td>68 STO 50</td>
<td></td>
</tr>
<tr>
<td>18 FC? 10</td>
<td>subroutine?</td>
<td>69 XEQ “X”</td>
<td>line 10</td>
</tr>
<tr>
<td>19 XEQ “Z”</td>
<td>AGI prompt</td>
<td>70 ADY</td>
<td></td>
</tr>
<tr>
<td>20 FC? 10</td>
<td>subroutine?</td>
<td>71 4</td>
<td>back 4 registers</td>
</tr>
<tr>
<td>21 ADY</td>
<td></td>
<td>72 ST- 00</td>
<td></td>
</tr>
<tr>
<td>22 29</td>
<td>line 1 register</td>
<td>73 39</td>
<td></td>
</tr>
<tr>
<td>23 STO 00</td>
<td>reset pointer</td>
<td>74 XEQ “T”</td>
<td></td>
</tr>
<tr>
<td>24 “DRUGS”</td>
<td></td>
<td>75 “SLITX”</td>
<td></td>
</tr>
<tr>
<td>25 XEQ “Z”</td>
<td>line 1 prompt</td>
<td>76 XEQ “Y”</td>
<td>line 11 prompt</td>
</tr>
<tr>
<td>26 “1%AGI”</td>
<td>AGI</td>
<td>77 “RESTX”</td>
<td>&amp; sum</td>
</tr>
<tr>
<td>27 RCL 17</td>
<td></td>
<td>78 XEQ “Y”</td>
<td>line 12 prompt</td>
</tr>
<tr>
<td>28 1</td>
<td></td>
<td>79 “SLSTX”</td>
<td>&amp; sum</td>
</tr>
<tr>
<td>29 %</td>
<td></td>
<td>80 XEQ “Y”</td>
<td></td>
</tr>
<tr>
<td>30 XEQ “X”</td>
<td>output line 2</td>
<td>81 “OTHER”</td>
<td>&amp; sum</td>
</tr>
<tr>
<td>31 “LINE3”</td>
<td></td>
<td>82 XEQ “Y”</td>
<td>line 14 prompt</td>
</tr>
<tr>
<td>32 SF 06</td>
<td>don't store</td>
<td>83 “TOTTX”</td>
<td>&amp; sum</td>
</tr>
<tr>
<td>33 XEQ “S”</td>
<td>line 1 - line 2</td>
<td>84 RCL 39</td>
<td>total tax</td>
</tr>
<tr>
<td>34 2</td>
<td>2 regs. back</td>
<td>85 RND</td>
<td></td>
</tr>
<tr>
<td>35 ST- 00</td>
<td></td>
<td>86 ST+ 50</td>
<td>add to line 28</td>
</tr>
<tr>
<td>36 “MDINS”</td>
<td></td>
<td>87 XEQ “X”</td>
<td>output line 15</td>
</tr>
<tr>
<td>37 XEQ “Y”</td>
<td>line 4 prompt</td>
<td>88 ADY</td>
<td></td>
</tr>
<tr>
<td>38 “DCTRS”</td>
<td>&amp; sum</td>
<td>89 43</td>
<td>new sum register</td>
</tr>
<tr>
<td>39 XEQ “Y”</td>
<td>line 5a prompt</td>
<td>90 XEQ “T”</td>
<td>store &amp; clear</td>
</tr>
<tr>
<td>40 “TRNSP”</td>
<td>&amp; sum</td>
<td>91 “MORTG”</td>
<td></td>
</tr>
<tr>
<td>41 XEQ “Y”</td>
<td>line 5b prompt</td>
<td>92 XEQ “Y”</td>
<td></td>
</tr>
<tr>
<td>42 “OTHER”</td>
<td>&amp; sum</td>
<td>93 “CITTD”</td>
<td></td>
</tr>
<tr>
<td>43 XEQ “Y”</td>
<td>line 5c prompt</td>
<td>94 XEQ “Y”</td>
<td>line 17 prompt</td>
</tr>
<tr>
<td>44 “LINE6”</td>
<td>&amp; sum</td>
<td>95 “OTHER”</td>
<td>&amp; sum</td>
</tr>
<tr>
<td>45 RCL 34</td>
<td>recall line 6</td>
<td>96 XEQ “Y”</td>
<td>line 18 prompt</td>
</tr>
<tr>
<td>46 XEQ “X”</td>
<td>output line 6</td>
<td>97 “TOTIN”</td>
<td>&amp; sum</td>
</tr>
<tr>
<td>47 “3%AGI”</td>
<td>AGI</td>
<td>98 RCL 43</td>
<td>line 19</td>
</tr>
<tr>
<td>48 RCL 17</td>
<td></td>
<td>99 RND</td>
<td></td>
</tr>
<tr>
<td>49 3</td>
<td></td>
<td>100 ST+ 50</td>
<td>add to line 28</td>
</tr>
<tr>
<td>50 %</td>
<td></td>
<td>101 XEQ “X”</td>
<td>output line 19</td>
</tr>
<tr>
<td>51 XEQ “X”</td>
<td>output line 7</td>
<td>102 ADY</td>
<td></td>
</tr>
<tr>
<td>52 ST+ 50</td>
<td></td>
<td>103 “CNTRB”</td>
<td></td>
</tr>
<tr>
<td>LISTING</td>
<td>COMMENTS</td>
<td>LISTING</td>
<td>COMMENTS</td>
</tr>
<tr>
<td>---------</td>
<td>----------</td>
<td>---------</td>
<td>----------</td>
</tr>
<tr>
<td>104 XEQ &quot;Z&quot;</td>
<td>line 23 prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>105 ST+ 50</td>
<td>add to line 28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>106 ADV</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>107 49</td>
<td>new sum register</td>
<td></td>
<td></td>
</tr>
<tr>
<td>108 XEQ &quot;T&quot;</td>
<td>store and clear</td>
<td></td>
<td></td>
</tr>
<tr>
<td>109 &quot;CSLTY&quot;</td>
<td>sum register</td>
<td></td>
<td></td>
</tr>
<tr>
<td>110 XEQ &quot;Y&quot;</td>
<td>line 24 prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>111 &quot;DUES &quot;</td>
<td>&amp; sum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>112 XEQ &quot;Y&quot;</td>
<td>line 25a prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>113 &quot;TXPRP&quot;</td>
<td>&amp; sum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>114 XEQ &quot;Y&quot;</td>
<td>line 25b prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>115 &quot;OTHER&quot;</td>
<td>&amp; sum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>116 XEQ &quot;Y&quot;</td>
<td>line 26 prompt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>117 &quot;TOTMS&quot;</td>
<td>&amp; sum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>118 RCL 49</td>
<td>line 27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>119 RND</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>120 ST+ 50</td>
<td>add to line 28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>121 XEQ &quot;X&quot;</td>
<td>output line 27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>122 ADV</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>123 &quot;GRDED&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>124 RCL 50</td>
<td>line 28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>125 XEQ &quot;X&quot;</td>
<td>output line 28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>126 &quot;ZBRAM&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>127 XEQ &quot;W&quot;</td>
<td>find zba</td>
<td></td>
<td></td>
</tr>
<tr>
<td>128 XEQ &quot;X&quot;</td>
<td>output zba</td>
<td></td>
<td></td>
</tr>
<tr>
<td>129 18</td>
<td>restore point</td>
<td></td>
<td></td>
</tr>
<tr>
<td>130 STO 00</td>
<td>for 1040</td>
<td></td>
<td></td>
</tr>
<tr>
<td>131 RDN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>132 &quot;DEDCT&quot;</td>
<td></td>
<td>line 28 - line 29</td>
<td></td>
</tr>
<tr>
<td>133 -</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>134 X&lt;0?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>135 CLX</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>136 STO 18</td>
<td>deductions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>137 FS? 10</td>
<td>subroutine?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>138 RTN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>139 XEQ &quot;X&quot;</td>
<td>output deductions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>140 ADV</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>141 ADV</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>142 END</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ROW 1</th>
<th>(1 : 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROW 2</td>
<td>(6 : 9)</td>
</tr>
<tr>
<td>ROW 3</td>
<td>(10 : 11)</td>
</tr>
<tr>
<td>ROW 4</td>
<td>(12 : 17)</td>
</tr>
<tr>
<td>ROW 5</td>
<td>(17 : 22)</td>
</tr>
<tr>
<td>ROW 6</td>
<td>(22 : 26)</td>
</tr>
<tr>
<td>ROW 7</td>
<td>(26 : 31)</td>
</tr>
<tr>
<td>ROW 8</td>
<td>(31 : 36)</td>
</tr>
<tr>
<td>ROW 9</td>
<td>(36 : 38)</td>
</tr>
<tr>
<td>ROW 10</td>
<td>(38 : 41)</td>
</tr>
<tr>
<td>ROW 11</td>
<td>(42 : 44)</td>
</tr>
<tr>
<td>ROW 12</td>
<td>(44 : 47)</td>
</tr>
<tr>
<td>ROW 13</td>
<td>(48 : 52)</td>
</tr>
<tr>
<td>ROW 14</td>
<td>(53 : 56)</td>
</tr>
<tr>
<td>ROW 15</td>
<td>(57 : 64)</td>
</tr>
<tr>
<td>ROW 16</td>
<td>(64 : 69)</td>
</tr>
<tr>
<td>ROW 17</td>
<td>(70 : 75)</td>
</tr>
<tr>
<td>ROW 18</td>
<td>(75 : 78)</td>
</tr>
</tbody>
</table>

PROGRAM REGISTERS NEEDED: 62
PROGRAM DESCRIPTION

SCHEDULE G
INCOME AVERAGING

PURPOSE -
The purpose of this program is to aid the user in Income Averaging using Schedule G.

FEATURES/WARNINGS -
The program is relatively straightforward in its operation. Once begun, it steps through the tax form displaying values it assumes to be correct for each line of the form.

Lines that require input from the user are denoted by a colon (":") between the line name (a string of five characters) and the current line value (some number). An example of a line of this type is "STATS: 2.", where "STATS" is an abbreviation for "Filing Status", the colon indicates that this is a user-specified value, and the "2." is the current value. At any time the user encounters a program display similar to the one just described, its line value may be used as is by pressing [R/S] (to continue the program) or may be changed by keying in some new value (using the numeric keys) and pressing [R/S] (to continue the program). Manual calculations may be performed at this time using the HP-41's stack in order to arrive at the desired value to be input.

Lines that represent values calculated by the program, and which should be copied to the form, are denoted by an equal sign ("=") between the line name and the line value. An example of this is "LIN13= 26,853.", where "LIN13" is an abbreviation for "line 13", the equal sign indicates that this is a program-calculated value, and "26,853." is the current line value. At any time a program display similar to the one just described is encountered, its line value MUST NOT be changed by the user (i.e., by pressing any key other than [R/S]), or the program may perform calculations based on the altered (and incorrect) value.

Not all Schedule G lines have been included in the program. The lines omitted have been so in order to leave space in the computer for other programs from this package. The lines omitted were chosen because of their (hopefully) limited use. If the user finds that he/she requires one of the omitted items, he/she cannot use this program to complete the form.

The following Schedule G lines have been omitted:
Line 11: income earned outside of the U.S.,
Line 15: premature excessive distribution penalty,
Line 16: Line 15 from line 14,
Line 17: community property state and separate returns,
Line 18: line 17 from line 16,
Line 19: copy of line 13,
Line 31: tax on line 14,
Line 32: tax on line 16,
Line 33: line 32 from 31.

The program works equally well in any display mode (FIX, SCI, ENG, 0 through 9), but best results will be obtained using either FIX 0 or 2 which correspond to whole dollar amounts and dollars- and- cents amounts respectively. Money values may be entered in either fashion regardless of the display mode and will be remembered by the program exactly as they are input. However, the display mode does have an effect on the program's output. All output values will be generated using the input values rounded to the current display mode (viz., an input of 9.25 in FIX 0 will be rounded to 9 before it is used in a calculation whereas the same value in FIX 2 will not be altered), and will cause small but perhaps significant deviations in output.

The Schedule G program can be run independent of any programs other than the "common routines" program. It may also be "called" from the 1040 program to complete Schedule G in the process of completing form 1040. If the latter occurs, certain line information will be assumed to have been input or calculated by the calling program. In other words, the Schedule G program will run a little differently (omitting certain inputs, treating others as outputs) when called than when run on its own. These differences will be detailed in the User Instructions.

The program does no error checking! All input values are assumed to be correct, regardless of their values, and are used as such. Erroneous values will usually not halt the program. The program may either be run to completion, or manually halted and restarted. Either way, the valid inputs may be skipped by pressing [R/S] and the invalid inputs corrected by entering the proper value when the line is displayed.

The program is compatible with printers. If a printer is attached, the program assumes it is on. All input values are echoed and all output values are streamed to the printer. With respect to the user, input values are treated in the same fashion regardless of the printer's presence. The output of program-generated values, on the other hand, differs dramatically based on the printer's existence. Without a printer, the program halts at each output value in the same fashion that it does when asking for input, thus allowing the user to manually record the value. With a printer, program-generated output does not halt program execution, is not displayed and is recorded on the printer, thus minimizing user interaction.

One feature of the program allows the user to skip all input prompts if the existing values are known to be correct. In this mode, the user without a printer may view only those lines calculated by the program. The user with a printer may rapidly generate an uninterrupted printout of both input and output. This mode is active when the flag 0 annunciator is lit in the display.
SAMPLE PROBLEM

Fill out the form on page 35.

The following example assumes:

* that programs "SG" (Schedule G), "T2" (1982 tax rate schedule) and "0" (common subroutines) have been loaded into memory.

* there are 60 available data registers (i.e., SIZE has been set to a number greater than 59).

* the program is in "input mode." This is accomplished by pressing [XEQ] "P" repeatedly (no more than twice is necessary) until the annunciator for flag 0 cannot be seen in the display.

* all pertinent data registers contain the value 0. This is only for convenience in describing the example and is not required. If the user desires to duplicate the example exactly, and is certain that no important data will be destroyed, the computer's CLRG function may be employed to clear data memory (via [XEQ] "CLRG").

* the display mode is FIX 0.

* flags 28 and 29 are set (HP-41 decimal point and digit grouping flags).

SOLUTION

<table>
<thead>
<tr>
<th>DISPLAY</th>
<th>INPUT</th>
<th>KEystrokes</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCHEDULE G</td>
<td>[R/S]*</td>
<td>[R/S]</td>
<td>[XEQ] &quot;SG&quot; Identifies the program.</td>
</tr>
<tr>
<td>STATS: 0.</td>
<td>2</td>
<td></td>
<td>Lines 1-5 of form 1040: filing status. If this program was called from the 1040 program, this prompt will be skipped.</td>
</tr>
<tr>
<td>78INC: 0.</td>
<td>22350</td>
<td>[R/S]</td>
<td>Line 1: 1978 form 1040, line 34.</td>
</tr>
<tr>
<td>EXMPT: 0.</td>
<td>2</td>
<td>[R/S]</td>
<td>1978 exemptions.</td>
</tr>
<tr>
<td>EXMPS= 1,500.</td>
<td>2</td>
<td>[R/S]*</td>
<td>Line 2: 1978 exemptions * 750</td>
</tr>
<tr>
<td>NET = 20,850.</td>
<td>25680</td>
<td>[R/S]</td>
<td>Line 3: line 2 from line 1.</td>
</tr>
<tr>
<td>79INC: 0.</td>
<td></td>
<td></td>
<td>Line 4: 1979 form 1040, line 34.</td>
</tr>
<tr>
<td>EXMPT: 0.</td>
<td>2</td>
<td>[R/S]</td>
<td>1979 exemptions.</td>
</tr>
<tr>
<td>EXMPS= 2,000.</td>
<td>2</td>
<td>[R/S]*</td>
<td>Line 5: 1979 exemptions * 1000</td>
</tr>
<tr>
<td>NET = 23,680.</td>
<td></td>
<td>[R/S]*</td>
<td>Line 6: line 5 from line 4.</td>
</tr>
<tr>
<td>80INC: 0.</td>
<td>21470</td>
<td>[R/S]</td>
<td>Line 7: 1980 form 1040, line 34.</td>
</tr>
<tr>
<td>DISPLAY</td>
<td>INPUT</td>
<td>KEYSTROKES</td>
<td>COMMENTS</td>
</tr>
<tr>
<td>---------</td>
<td>-------</td>
<td>------------</td>
<td>----------</td>
</tr>
<tr>
<td>EXMPT: 0.</td>
<td>3</td>
<td>[R/S]</td>
<td>1980 exemptions.</td>
</tr>
<tr>
<td>EXMPS =</td>
<td>3,000.</td>
<td>[R/S]*</td>
<td>Line 8: 1980 exemptions * 1000</td>
</tr>
<tr>
<td>NET =</td>
<td>18,470.</td>
<td>[R/S]*</td>
<td>Line 9: line 8 from line 7.</td>
</tr>
<tr>
<td>81INC: 0.</td>
<td>26510</td>
<td>[R/S]</td>
<td>Line 10: 1981 form 1040, line 34.</td>
</tr>
<tr>
<td>TOTAL=</td>
<td>89,510.</td>
<td>[R/S]*</td>
<td>Line 12: sum of lines 3, 6, 9, 10 and 11.</td>
</tr>
<tr>
<td>LIN13=</td>
<td>26,853.</td>
<td>[R/S]*</td>
<td>Line 12 * 0.3</td>
</tr>
<tr>
<td>82INC: 0.</td>
<td>37504</td>
<td>[R/S]</td>
<td>Line 14: 1982 form 1040, line 34. Note that this is not the same number as presented in the example for form 1040. Use of that value would not permit income averaging.</td>
</tr>
<tr>
<td>LIN20=</td>
<td>10,651.</td>
<td>[R/S]*</td>
<td>Line 13 from line 14.</td>
</tr>
<tr>
<td>LIN21=</td>
<td>2,130.</td>
<td>[R/S]*</td>
<td>Line 20 * 0.2</td>
</tr>
<tr>
<td>26,27=</td>
<td>5,308.</td>
<td>[R/S]*</td>
<td>Tax on line 25. Note that there is a slight delay before this value is displayed.</td>
</tr>
<tr>
<td>LIN28=</td>
<td>4,690.</td>
<td>[R/S]*</td>
<td>Tax on line 13. Note that there is a slight delay before this value is displayed.</td>
</tr>
<tr>
<td>LIN29=</td>
<td>618.</td>
<td>[R/S]*</td>
<td>Line 28 from 27.</td>
</tr>
<tr>
<td>LIN30=</td>
<td>2,472.</td>
<td>[R/S]*</td>
<td>Line 29 * 4.</td>
</tr>
<tr>
<td>SGTAX=</td>
<td>7,780.</td>
<td>[R/S]*</td>
<td>Line 26 + line 30.</td>
</tr>
<tr>
<td>7,780.</td>
<td></td>
<td></td>
<td>Superfluous number left in the X-register.</td>
</tr>
</tbody>
</table>

* [R/S] in this instance is not necessary if a printer is attached.
## Schedule G

**Form 1040**

**Department of the Treasury**

**Internal Revenue Service**

**Income Averaging**

**OMB No. 1545-0074**

*See instructions on back.*

*Attach to Form 1040.*

### Step 1  Figure your income for 1978-1981

<table>
<thead>
<tr>
<th>Year</th>
<th>Action</th>
<th>Amount</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>Fill the amount from your 1978 Form 1040 (line 34) or Form 1040A (line 10)</td>
<td>$22,350</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Multiply your total exemptions in 1978 by $750</td>
<td>$1,500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subtract line 2 from line 1. If less than zero, enter zero.</td>
<td></td>
<td>$20,850</td>
</tr>
<tr>
<td>1979</td>
<td>Fill the amount from your 1979 Form 1040 (line 34) or Form 1040A (line 11)</td>
<td>$25,680</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Multiply your total exemptions in 1979 by $1,000</td>
<td>$2,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subtract line 5 from line 4. If less than zero, enter zero.</td>
<td></td>
<td>$23,680</td>
</tr>
<tr>
<td>1980</td>
<td>Fill the amount from your 1980 Form 1040 (line 34) or Form 1040A (line 11)</td>
<td>$21,470</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Multiply your total exemptions in 1980 by $1,000</td>
<td>$3,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subtract line 8 from line 7. If less than zero, enter zero.</td>
<td></td>
<td>$18,470</td>
</tr>
<tr>
<td>1981</td>
<td>Taxable income. Fill the amount from your 1981 Form 1040 (line 34) or Form 1040A (line 12). If less than zero, enter zero.</td>
<td></td>
<td>$26,510</td>
</tr>
</tbody>
</table>

**Total**

- Add lines 3, 6, 9, 10, and 11 | $89,510 |

### Step 2  Figure your averageable income

<table>
<thead>
<tr>
<th>Action</th>
<th>Amount</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiply the amount on line 12 by 30% (.30)</td>
<td></td>
<td>$26,853</td>
</tr>
<tr>
<td>Fill in the taxable income for 1982 from Form 1040, line 37</td>
<td></td>
<td>$37,504</td>
</tr>
<tr>
<td>If you received a premature or excessive distribution subject to a penalty under section 72, see instructions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtract line 15 from line 14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If you live in a community property state and are filing a separate return, see instructions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtract line 17 from line 16. If less than zero, enter zero</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Write in the amount from line 13 above</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtract line 19 from line 18. This is your averageable income.</td>
<td></td>
<td>$10,651</td>
</tr>
</tbody>
</table>

**If line 20 is $3,000 or less, do not complete the rest of this form. You do not qualify for income averaging.**

### Step 3  Figure your tax

<table>
<thead>
<tr>
<th>Action</th>
<th>Amount</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiply the amount on line 20 by 20% (.20)</td>
<td></td>
<td>$2,130</td>
</tr>
<tr>
<td>Write in the answer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Write in the amount from line 13 above</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Add lines 21 and 22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Write in the amount from line 17 above</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Add lines 23 and 24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tax on amount on line 25 (from Tax Rate Schedule X, Y, or Z)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tax on amount on line 23 (from Tax Rate Schedule X, Y, or Z)</td>
<td></td>
<td>$5,308</td>
</tr>
<tr>
<td>Tax on amount on line 22 (from Tax Rate Schedule X, Y, or Z)</td>
<td></td>
<td>$4,690</td>
</tr>
<tr>
<td>Subtract line 28 from line 27</td>
<td></td>
<td>$618</td>
</tr>
<tr>
<td>Multiply the amount on line 29 by 4</td>
<td></td>
<td>$2,472</td>
</tr>
<tr>
<td>If you have no entry on line 15, skip lines 31 through 33 and go to line 34.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tax on amount on line 14 (from Tax Rate Schedule X, Y, or Z)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tax on amount on line 16 (from Tax Rate Schedule X, Y, or Z)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtract line 32 from line 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Add lines 26, 30, and 33. Write the result here and on Form 1040, line 38. Be sure to check the Schedule G box on that line.</td>
<td></td>
<td>$7,780</td>
</tr>
</tbody>
</table>

*For Paperwork Reduction Act Notice, see Form 1040 instructions.*
<table>
<thead>
<tr>
<th>INSTRUCTIONS</th>
<th>INPUT</th>
<th>KEYSTROKES</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>At a minimum, load the following programs:</td>
<td>[shift][GTO] ..</td>
<td>[shift][GTO] ..</td>
<td>[shift][GTO] ..</td>
</tr>
<tr>
<td>&quot;SG&quot; (form 1040)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;T2&quot; ('82 tax tables) or &quot;T3&quot; ('83 tax tables)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;O&quot; (misc. routines).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allocate data registers (minimum 60).</td>
<td>[XEQ] &quot;SIZE&quot; 060</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select an appropriate display format.</td>
<td>[shift][FIX] n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select either &quot;prompting&quot; (flag 0 set) or &quot;non-prompting&quot; (flag 0 clear) mode. Pressing [XEQ] &quot;P&quot; toggles between these modes.</td>
<td>[XEQ] &quot;P&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Run the Schedule G program.</td>
<td>[XEQ] &quot;SG&quot;</td>
<td>SCHEDULE G</td>
<td></td>
</tr>
<tr>
<td>Enter one of lines 1-5: your filing status. If this program was called from the 1040 program, this prompt will be skipped.</td>
<td>[R/S]*</td>
<td>STATS: x</td>
<td>status</td>
</tr>
<tr>
<td>Input line 1: 1978 form 1040, line 34.</td>
<td>line 34</td>
<td>EXMPT: x</td>
<td>exemptions</td>
</tr>
<tr>
<td>Input 1978 exemptions.</td>
<td>exemptions</td>
<td>EXMPS= x</td>
<td></td>
</tr>
<tr>
<td>Output of line 2: 1978 exemptions * 750.</td>
<td>[R/S]*</td>
<td>NET = x</td>
<td></td>
</tr>
<tr>
<td>Output of line 3: line 2 from line 1.</td>
<td>[R/S]*</td>
<td>79INC: x</td>
<td></td>
</tr>
<tr>
<td>Input line 4: 1979 form 1040, line 34.</td>
<td>line 34</td>
<td>EXMPT: x</td>
<td></td>
</tr>
<tr>
<td>Input 1979 exemptions.</td>
<td>exemptions</td>
<td>EXMPS= x</td>
<td></td>
</tr>
<tr>
<td>Output of line 5: 1979 exemptions * 1000.</td>
<td>[R/S]</td>
<td>NET = x</td>
<td></td>
</tr>
<tr>
<td>INSTRUCTIONS</td>
<td>INPUT</td>
<td>KEYSTROKES</td>
<td>DISPLAY</td>
</tr>
<tr>
<td>--------------</td>
<td>-------</td>
<td>------------</td>
<td>---------</td>
</tr>
<tr>
<td>15. Output of line 6: line 5 from line 4.</td>
<td></td>
<td>[R/S]*</td>
<td>80INC: x</td>
</tr>
<tr>
<td>16. Input line 7: 1980 form 1040, line 34.</td>
<td>line 34</td>
<td>[R/S]</td>
<td>EXMPT: x</td>
</tr>
<tr>
<td>17. Input 1980 exemptions.</td>
<td>exemptions</td>
<td>[R/S]</td>
<td>EXMP$= x</td>
</tr>
<tr>
<td>18. Output of Line 8: 1980 exemptions * 1000.</td>
<td></td>
<td>[R/S]*</td>
<td>NET = x</td>
</tr>
<tr>
<td>19. Output of Line 9: line 8 from line 7.</td>
<td></td>
<td>[R/S]*</td>
<td>81INC: x</td>
</tr>
<tr>
<td>20. Input line 10: 1981 form 1040, line 34.</td>
<td>line 34</td>
<td>[R/S]</td>
<td>TOTAL= x</td>
</tr>
<tr>
<td>21. Output of Line 12: sum of lines 3, 6, 9, 10 and 11.</td>
<td></td>
<td>[R/S]*</td>
<td>LIN13= x</td>
</tr>
<tr>
<td>22. Output of Line 12 * 0.3</td>
<td></td>
<td>[R/S]*</td>
<td>82INC: x</td>
</tr>
<tr>
<td>23. Input line 14: 1982 form 1040, line 34. If the program was called from the 1040 program, this will be an output display.</td>
<td>line 34</td>
<td>[R/S]</td>
<td>LIN20= x</td>
</tr>
<tr>
<td>24. Output of Line 13 from line 14.</td>
<td></td>
<td>[R/S]*</td>
<td>LIN21= x</td>
</tr>
<tr>
<td>25. If line 20 is less than or equal to 3000, &quot;NG&quot; is displayed rather than line 21. If this is the case, then you do not qualify for income averaging and the program terminates. If the program was called from the 1040 program, control is passed back to that program at this time.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. Output of line 20 * 0.2</td>
<td></td>
<td>[R/S]*</td>
<td>23,25= x</td>
</tr>
<tr>
<td>27. Output of line 21 + line 13.</td>
<td></td>
<td>[R/S]*</td>
<td>26,27= x</td>
</tr>
</tbody>
</table>
INSTRUCTIONS | INPUT | KEYSTROKES | DISPLAY
-----------------|--------|-----------|-----------------
28. Output of tax on line 25. Note that there is a slight delay before this value is displayed. | | [R/S]* | LIN28= x |
29. Output of tax on line 13. Note that there is a slight delay before this value is displayed. | | [R/S]* | LIN29= x |
30. Output of line 28 from 27. | | [R/S]* | LIN30= x |
31. Output of line 29 * 4. | | [R/S]* | SGTAX= x |
32. Output of Line 26 + line 30. | | [R/S]* | LOTAX= x |
33. If the program was called from the 1040 program, "SGTAX" is compared with the tax on line 38 of form 1040. The lower of the two values is then displayed and returned to the 1040 program. Control passes back to the 1040 program at this time. If not called from 1040, the program terminates here with a superfluous number in the X-register. | | [R/S]* | x |
* [R/S] in this instance is not necessary if a printer is attached.
PROGRAM DETAIL -

The Schedule G program is 126 steps and 336 bytes (47.9 registers) long. It requires two other programs: the miscellaneous routines program at 233 bytes and one of the two tax rate programs at 332 and 355 bytes. At a minimum, 60 data registers are needed, totalling 188.6 or 191.9 registers for operation.

The program has two entry points, global labels "SG" and "GS". Label "SG" is the user entry point. When the user desires to run the program independent of the 1040 program, this label is accessed. Label "GS" is the entry point for the 1040 program.

Aside from the flags manipulated by the subroutines called, the program itself manipulates the following flags:

flag 04 : set - if the program was called via "GS"
clear - if the program was called via "SG"
flag 06 : set - to disable the sum feature of routine "S"
flag 12 : set - print double wide (for the printed program identifier)
clear - print single wide

The data registers used by the form 1040 program are preserved with the exception of registers 1, 21 and 22. The first two registers are not modified if the program is called from the 1040 program, but can be if the program is run on its own. Register 22 is only modified if the program is called from the 1040 program and its value is greater than the calculated Schedule G tax. The following data registers are used:

00 = register index for data manipulation
01 = lines 1 through 5, form 1040: filing status
21 = line 37, form 1040: taxable income
22 = line 38, form 1040: tax
51 = line 1: 1978 form 1040 line 34
52 = line 2: 1978 exemptions
53 = line 4: 1979 form 1040 line 34
54 = line 5: 1979 exemptions
55 = line 7: 1980 form 1040 line 34
56 = line 8: 1980 exemptions
57 = line 10: 1981 taxable income
58 = line 12: sum of lines 3, 6, 9, 10 and 11;
   line 13: line 12 * 0.3;
59 = 750;
   1000;
   lines 26, 27;
   line 34;
<table>
<thead>
<tr>
<th>LISTING</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 LBL “SG”</td>
<td>user entry point</td>
</tr>
<tr>
<td>02 CF 04</td>
<td>not a subroutine</td>
</tr>
<tr>
<td>03 SF 12</td>
<td>double wide print</td>
</tr>
<tr>
<td>04 GTO 10</td>
<td>to step 09</td>
</tr>
<tr>
<td>05 LBL “GS”</td>
<td>subroutine entry</td>
</tr>
<tr>
<td>06 SF 04</td>
<td>subroutine flag</td>
</tr>
<tr>
<td>07 CF 12</td>
<td>print single wide</td>
</tr>
<tr>
<td>08 XEQ “O”</td>
<td>print divider</td>
</tr>
<tr>
<td>09 LBL 10</td>
<td></td>
</tr>
<tr>
<td>10 58</td>
<td>sum register</td>
</tr>
<tr>
<td>11 “SCHEDULE”</td>
<td></td>
</tr>
<tr>
<td>12 XEQ “U”</td>
<td>initialize</td>
</tr>
<tr>
<td>13 FC? 04</td>
<td>not a subroutine?</td>
</tr>
<tr>
<td>14 XEQ “Z”</td>
<td>status prompt</td>
</tr>
<tr>
<td>15 51</td>
<td>line 1</td>
</tr>
<tr>
<td>16 STO 00</td>
<td>reset pointer</td>
</tr>
<tr>
<td>17 750</td>
<td>amt by which to</td>
</tr>
<tr>
<td>18 STO 59</td>
<td>multiply exemps</td>
</tr>
<tr>
<td>19 “78”</td>
<td></td>
</tr>
<tr>
<td>20 XEQ 00</td>
<td>1978 prompts</td>
</tr>
<tr>
<td>21 1 E3</td>
<td>amt by which to</td>
</tr>
<tr>
<td>22 STO 59</td>
<td>multiply exemps</td>
</tr>
<tr>
<td>23 “79”</td>
<td></td>
</tr>
<tr>
<td>24 XEQ 00</td>
<td>1979 prompts</td>
</tr>
<tr>
<td>25 “80”</td>
<td></td>
</tr>
<tr>
<td>26 XEQ 00</td>
<td>1980 prompts</td>
</tr>
<tr>
<td>27 “81INC”</td>
<td></td>
</tr>
<tr>
<td>28 XEQ “Y”</td>
<td>line 10 prompt &amp;</td>
</tr>
<tr>
<td>29 “TOTAL”</td>
<td>sum</td>
</tr>
<tr>
<td>30 RCL 58</td>
<td>line 12</td>
</tr>
<tr>
<td>31 XEQ “V”</td>
<td>output line 12</td>
</tr>
<tr>
<td>32 “LIN13”</td>
<td></td>
</tr>
<tr>
<td>33 30</td>
<td></td>
</tr>
<tr>
<td>34 %</td>
<td></td>
</tr>
<tr>
<td>35 STO 58</td>
<td>output line 13</td>
</tr>
<tr>
<td>36 XEQ “V”</td>
<td></td>
</tr>
<tr>
<td>37 “82INC”</td>
<td>reset pointer</td>
</tr>
<tr>
<td>38 21</td>
<td>form 1040 tbl inc</td>
</tr>
<tr>
<td>39 STO 00</td>
<td>subroutine?</td>
</tr>
<tr>
<td>40 RCL 21</td>
<td>output taxable inc</td>
</tr>
<tr>
<td>41 FS? 04</td>
<td>not a subroutine?</td>
</tr>
<tr>
<td>42 XEQ “X”</td>
<td>taxable income</td>
</tr>
<tr>
<td>43 FC? 04</td>
<td></td>
</tr>
<tr>
<td>44 XEQ “Z”</td>
<td>prompt</td>
</tr>
<tr>
<td>45 “LIN20”</td>
<td></td>
</tr>
<tr>
<td>46 RCL 58</td>
<td></td>
</tr>
<tr>
<td>47 RND</td>
<td>line 19 from line</td>
</tr>
<tr>
<td>48 -</td>
<td>18</td>
</tr>
<tr>
<td>49 XEQ “V”</td>
<td>output line 20</td>
</tr>
<tr>
<td>50 ADV</td>
<td></td>
</tr>
<tr>
<td>51 “NG”</td>
<td>”no good” test</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LISTING</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>52 3 E3</td>
<td></td>
</tr>
<tr>
<td>53 X&lt;&gt;Y</td>
<td></td>
</tr>
<tr>
<td>54 X&lt;&gt;Y?</td>
<td></td>
</tr>
<tr>
<td>55 AVIEW</td>
<td></td>
</tr>
<tr>
<td>56 X&lt;&gt;Y?</td>
<td></td>
</tr>
<tr>
<td>57 GTO 01</td>
<td>skip rest of form</td>
</tr>
<tr>
<td>58 “LIN21”</td>
<td></td>
</tr>
<tr>
<td>59 20</td>
<td></td>
</tr>
<tr>
<td>60 %</td>
<td></td>
</tr>
<tr>
<td>61 XEQ “V”</td>
<td>output line 21</td>
</tr>
<tr>
<td>62 “23,25”</td>
<td></td>
</tr>
<tr>
<td>63 RCL 58</td>
<td>line 13</td>
</tr>
<tr>
<td>64 RND</td>
<td></td>
</tr>
<tr>
<td>65 +</td>
<td></td>
</tr>
<tr>
<td>66 XEQ “V”</td>
<td>output 23, 25</td>
</tr>
<tr>
<td>67 XEQ “R”</td>
<td>tax on 23, 25</td>
</tr>
<tr>
<td>68 “26,27”</td>
<td></td>
</tr>
<tr>
<td>69 STO 59</td>
<td></td>
</tr>
<tr>
<td>70 XEQ “V”</td>
<td>output tax</td>
</tr>
<tr>
<td>71 RCL 58</td>
<td>line 13</td>
</tr>
<tr>
<td>72 XEQ “R”</td>
<td>tax on line 13</td>
</tr>
<tr>
<td>73 “LIN28”</td>
<td>output tax</td>
</tr>
<tr>
<td>74 XEQ “V”</td>
<td></td>
</tr>
<tr>
<td>75 “LIN29”</td>
<td></td>
</tr>
<tr>
<td>76 RCL 59</td>
<td>line 27</td>
</tr>
<tr>
<td>77 RND</td>
<td></td>
</tr>
<tr>
<td>78 X&lt;&gt;Y</td>
<td></td>
</tr>
<tr>
<td>79 -</td>
<td></td>
</tr>
<tr>
<td>80 XEQ “V”</td>
<td>output line 29</td>
</tr>
<tr>
<td>81 “LIN30”</td>
<td></td>
</tr>
<tr>
<td>82 4</td>
<td></td>
</tr>
<tr>
<td>83 *</td>
<td></td>
</tr>
<tr>
<td>84 XEQ “V”</td>
<td>output line 30</td>
</tr>
<tr>
<td>85 “SGTAX”</td>
<td></td>
</tr>
<tr>
<td>86 ST+ 59</td>
<td>line 30 + line 27</td>
</tr>
<tr>
<td>87 RCL 59</td>
<td></td>
</tr>
<tr>
<td>88 XEQ “V”</td>
<td>output line 34</td>
</tr>
<tr>
<td>89 FC? 04</td>
<td>not a subroutine?</td>
</tr>
<tr>
<td>90 GTO 01</td>
<td>skip final calc.</td>
</tr>
<tr>
<td>91 “LOTAX”</td>
<td></td>
</tr>
<tr>
<td>92 RCL 59</td>
<td>line 34</td>
</tr>
<tr>
<td>93 RCL 22</td>
<td>1040 tax</td>
</tr>
<tr>
<td>94 X&lt;&gt;Y?</td>
<td></td>
</tr>
<tr>
<td>95 X&lt;&gt;Y</td>
<td></td>
</tr>
<tr>
<td>96 STO 22</td>
<td>new lowest tax</td>
</tr>
<tr>
<td>97 XEQ “V”</td>
<td>output low tax</td>
</tr>
<tr>
<td>98 GTO 01</td>
<td>skip subroutine</td>
</tr>
<tr>
<td>99 LBL 00</td>
<td>yearly output</td>
</tr>
<tr>
<td>100 “HINC”</td>
<td></td>
</tr>
<tr>
<td>101 XEQ “Z”</td>
<td>yearly income</td>
</tr>
<tr>
<td>102 “EXMPT”</td>
<td>prompt</td>
</tr>
<tr>
<td>103 XEQ “Z”</td>
<td>exemption prompt</td>
</tr>
<tr>
<td>LISTING</td>
<td>COMMENTS</td>
</tr>
<tr>
<td>---------</td>
<td>----------</td>
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<tr>
<td>104 “EXMP$”</td>
<td>exemption multiplier</td>
</tr>
<tr>
<td>105 RCL 59</td>
<td>output dollar</td>
</tr>
<tr>
<td>106 *</td>
<td>exemption</td>
</tr>
<tr>
<td>107 XEQ &quot;Y&quot;</td>
<td>activate sum option</td>
</tr>
<tr>
<td>108 &quot;NET &quot;</td>
<td>output yearly net</td>
</tr>
<tr>
<td>109 RCL 00</td>
<td>common end</td>
</tr>
<tr>
<td>110 2</td>
<td>subroutine?</td>
</tr>
<tr>
<td>111 -</td>
<td>print separator</td>
</tr>
<tr>
<td>112 RCL IND</td>
<td>income</td>
</tr>
<tr>
<td>113 X&lt;&gt;Y</td>
<td>income - exemption</td>
</tr>
<tr>
<td>114 RDN</td>
<td>activate sum option</td>
</tr>
<tr>
<td>115 X&lt;&gt;Y</td>
<td>output yearly net</td>
</tr>
<tr>
<td>116 -</td>
<td>subroutine?</td>
</tr>
<tr>
<td>117 SF 06</td>
<td>print separator</td>
</tr>
<tr>
<td>118 XEQ &quot;O&quot;</td>
<td>subroutine?</td>
</tr>
<tr>
<td>119 ADV</td>
<td>print separator</td>
</tr>
<tr>
<td>120 RTN</td>
<td>subroutine?</td>
</tr>
<tr>
<td>121 LBL 01</td>
<td>subroutine?</td>
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<td>123 FS?C 04</td>
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<tr>
<td>124 XEQ &quot;O&quot;</td>
<td>subroutine?</td>
</tr>
<tr>
<td>125 ADV</td>
<td>subroutine?</td>
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<tr>
<td>126 END</td>
<td>subroutine?</td>
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<td>ROW</td>
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</tr>
<tr>
<td>1</td>
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<td>2</td>
<td>5 : 9</td>
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<td>10 : 11</td>
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<td>12 : 17</td>
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<td>17 : 22</td>
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<td>22 : 26</td>
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<td>27 : 29</td>
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<td>29 : 32</td>
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<td>33 : 37</td>
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<td>61 : 66</td>
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<td>15</td>
<td>66 : 69</td>
</tr>
<tr>
<td>16</td>
<td>70 : 73</td>
</tr>
<tr>
<td>17</td>
<td>73 : 77</td>
</tr>
<tr>
<td>18</td>
<td>78 : 83</td>
</tr>
</tbody>
</table>

PROGRAM REGISTERS NEEDED: 48
PROGRAM DESCRIPTION

1982 AND 1983 TAX RATE SCHEDULES

PURPOSE -

The purpose of these programs is to aid the user in calculating tax on income and to provide the same function for the 1040 and Schedule G programs.

FEATURES/WARNINGS -

Lines that require input from the user are denoted by a colon (";") between the line name (a string of five characters) and the current line value (some number). An example of a line of this type is "STATS: 2.", where "STATS" is an abbreviation for "Filing Status", the colon indicates that this is a user-specified value, and the "2." is the current value. At any time the user encounters a program display similar to the one just described, its line value may be used as is by pressing [R/S] (to continue the program) or may be changed by keying in some new value (using the numeric keys) and pressing [R/S] (to continue the program). Manual calculations may be performed at this time using the HP-41's stack in order to arrive at the desired value to be input.

Lines that represent values calculated by the program, and which should be copied to the form, are denoted by an equal sign ("=") between the line name and the line value. An example of this is "TX82 = 4,823.", where "TX82 " is an abbreviation for "1982 tax", the equal sign indicates that this is a program-calculated value, and "4,823." is the current line value. At any time a program display similar to the one just described is encountered, its line value MUST NOT be changed by the user (i.e., by pressing any key other than [R/S]), or the program may perform calculations based on the altered (and incorrect) value.

The program works equally well in any display mode (FIX, SCI, ENG, 0 through 9), but best results will be obtained using either FIX 0 or 2 which correspond to whole dollar amounts and dollars-and-cents amounts respectively. Money values may be entered in either fashion regardless of the display mode and will be remembered by the program exactly as they are input. However, the display mode does have an effect on the program's output. All output values will be generated using the input values rounded to the current display mode (viz., an input of 9.25 in FIX 0 will be rounded to 9 before it is used in a calculation whereas the same value in FIX 2 will not be altered), and will cause small but perhaps significant deviations in output.

The tax rate schedule programs can be run independent of any programs other than the "common routines" program. They may also be "called" from the 1040 and Schedule G programs to complete. If the latter occurs, certain line information will be assumed to have been input or calculated by the calling program. In other words, the tax rate programs will run differently (omitting all inputs and generating no output displays) when called than when run on their own. These differences will be detailed in the User Instructions.
The program does no error checking! All input values are assumed to be correct, regardless of their values, and are used as such. Erroneous values will usually not halt the program. The program may either be run to completion, or manually halted and restarted. Either way, the valid inputs may be skipped by pressing [R/S] and the invalid inputs corrected by entering the proper value when the line is displayed.

The program is compatible with printers. If a printer is attached, the program assumes it is on. All input values are echoed and all output values are streamed to the printer. With respect to the user, input values are treated in the same fashion regardless of the printer's presence. The output of program-generated values, on the other hand, differs dramatically based on the printer's existence. Without a printer, the program halts at each output value in the same fashion that it does when asking for input, thus allowing the user to manually record the value. With a printer, program-generated output does not halt program execution, is not displayed and is recorded on the printer, thus minimizing user interaction.

One feature of the program allows the user to skip all input prompts if the existing values are known to be correct. In this mode, the user without a printer may view only those lines calculated by the program. The user with a printer may rapidly generate an uninterrupted printout of both input and output. This mode is active when the flag 0 annunciator is lit in the display.
With a filing status of 2, calculate the tax table tax on $23,456.00.

The example assumes:

* that programs "T2" (1982 tax rate schedule) and "0" (common subroutines) have been loaded into memory.

* there are 29 available data registers (i.e., SIZE has been set to a number greater than 28).

* the program is in "input mode." This is accomplished by pressing [XEQ] "P" repeatedly (no more than twice is necessary) until the annunciator for flag 0 cannot be seen in the display.

* all pertinent data registers contain the value 0. This is only for convenience in describing the example and is not required. If the user desires to duplicate the example exactly, and is certain that no important data will be destroyed, the computer's CLRG function may be employed to clear data memory (via [XEQ] "CLRG").

* the display mode is FIX 0.

* flags 28 and 29 are set (the HP-41 decimal point and digit grouping flags).

### SOLUTION

<table>
<thead>
<tr>
<th>DISPLAY</th>
<th>INPUT</th>
<th>KEYSTROKES</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>82 TAX RATE</td>
<td></td>
<td>[XEQ] &quot;T2&quot;</td>
<td>Identifies the program.</td>
</tr>
<tr>
<td>STATS: 0.</td>
<td>2</td>
<td>[R/S]*</td>
<td>Lines 1-5 of form 1040: filing status. If this program was called from another program, this prompt will be skipped.</td>
</tr>
<tr>
<td>TXABL: 0.</td>
<td>23456</td>
<td>[R/S]</td>
<td>Line 37 form 1040. If this program was called from another program, this prompt will be skipped.</td>
</tr>
<tr>
<td>TX82 = 3,751.</td>
<td></td>
<td>[R/S]*</td>
<td>Tax</td>
</tr>
</tbody>
</table>

* [R/S] in this instance is not necessary if a printer is attached.
USER INSTRUCTIONS

INSTRUCTIONS | INPUT | KEYSTROKES | DISPLAY

1. At a minimum, load the following programs:
   "T2" ('82 tax tables) or "T3" ('83 tax tables)  
   "0" (misc. routines).
   [shift][GTO] ..

2. Allocate data registers (minimum 29).
   [XEQ] "SIZE" 029

3. Select an appropriate display format.
   [shift][FIX] n

4. Select either "prompting" (flag 0 set) or "non-prompting" (flag 0 clear) mode.
   Pressing [XEQ] "P" toggles between these modes.
   [XEQ] "P"

5. Run the tax rate program.
   [XEQ] "T2" 82 TAX RATE
   [XEQ] "T3" 83 TAX RATE

6. This display identifies the program.
   [R/S]*  STATS: x

7. Enter one of lines 1-5: your filing status. If this program was called from another program, this prompt will be skipped.
   status  [R/S]  TXABL: x

8. Input line 37, form 1040.
   If the program was called from another program, this prompt will be skipped.
   line 37  [R/S]  TX82 = x
   or
   TX83 = x

   [R/S]*  x

10. A superfluous value will be left in the X-register.

* [R/S] in this instance is not necessary if a printer is attached.
PROGRAM DETAIL -

The tax rate 1982 program is 122 steps and 332 bytes (47.4 registers) long. It requires one other program: the miscellaneous routines program at 233 bytes. At a minimum, 29 data registers are needed, totalling 109.7 registers.

The tax rate 1983 program is 129 steps and 355 bytes (50.7 registers) long. It requires one other program: the miscellaneous routines program at 233 bytes. At a minimum, 29 data registers are needed, totalling 113 registers.

The programs have two entry points, global labels "T2" or "T3" and "R". Labels "T2" and "T3" are user entry points. When the user desires to run the programs independent of another program, these labels are accessed. Label "R" is the entry point for calling programs.

Aside from the flags manipulated by the subroutines called, the programs themselves manipulate the following flags:

flag 09 : set - status <> 3
clear - status = 3

flag 10 : set - if the program was called via "R"
clear - if the program was called via "T2" or "T3"

flag 12 : set - print double wide (for the printed program identifier)
clear - print single wide

The data registers used by the form 1040 program are preserved with the exception of registers 1, 21 and 27. The first two registers are not modified if the programs are called from another program, but can be if the programs are run on their own. Register 27 is always destroyed by the programs. The following data registers are used:

00 = register index for data manipulation
01 = lines 1 through 5, form 1040: filing status
21 = line 37, form 1040: taxable income
27 = tax accumulator
28 = number from which tax bracket multipliers are retrieved
<table>
<thead>
<tr>
<th>LISTING</th>
<th>COMMENTS</th>
<th>LISTING</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 LBL &quot;T2&quot;</td>
<td>user entry point</td>
<td>45 XEQ 11</td>
<td>step 57</td>
</tr>
<tr>
<td>02 SF 12</td>
<td>print double wide</td>
<td>46 .4142445</td>
<td>more bracket data</td>
</tr>
<tr>
<td>03 &quot;82 TAX</td>
<td>RATE&quot;</td>
<td>353</td>
<td></td>
</tr>
<tr>
<td>04 CF 04</td>
<td>no accumulator</td>
<td>47 XEQ 12</td>
<td>step 60</td>
</tr>
<tr>
<td>05 XEQ &quot;U&quot;</td>
<td>initialize</td>
<td>48 1.06</td>
<td>more brackets</td>
</tr>
<tr>
<td>06 SF 10</td>
<td>not a subroutine</td>
<td>49 ENTER</td>
<td>more multipliers</td>
</tr>
<tr>
<td>07 XEQ &quot;Z&quot;</td>
<td>status prompt</td>
<td>50 .551</td>
<td>step 57</td>
</tr>
<tr>
<td>08 21</td>
<td>line 37</td>
<td>51 XEQ 11</td>
<td>big bracket</td>
</tr>
<tr>
<td>09 STO 00</td>
<td>reset pointer</td>
<td>52 1.42</td>
<td>step 71</td>
</tr>
<tr>
<td>10 &quot;TXABL&quot;</td>
<td>taxable income</td>
<td>53 XEQ 09</td>
<td>更大的 bracket</td>
</tr>
<tr>
<td>11 XEQ &quot;Z&quot;</td>
<td>prompt</td>
<td>54 256</td>
<td>step 71</td>
</tr>
<tr>
<td>12 GTO 00</td>
<td>skip subroutine</td>
<td>55 XEQ 09</td>
<td>end program</td>
</tr>
<tr>
<td>13 LBL &quot;R&quot;</td>
<td>sub. entry point</td>
<td>56 GTO 10</td>
<td>begin calculation</td>
</tr>
<tr>
<td>14 SF 10</td>
<td>subroutine flag</td>
<td>57 LBL 11</td>
<td>store multipliers</td>
</tr>
<tr>
<td>15 LBL 00</td>
<td>from step 12</td>
<td>58 STO 28</td>
<td>get bracket data</td>
</tr>
<tr>
<td>16 ENTER</td>
<td>taxable into Y</td>
<td>59 RDN</td>
<td></td>
</tr>
<tr>
<td>17 CLX</td>
<td>clear tax accumulator</td>
<td>60 LBL 12</td>
<td></td>
</tr>
<tr>
<td>18 STO 27</td>
<td>retrieve taxable</td>
<td>61 RDN</td>
<td>get taxable</td>
</tr>
<tr>
<td>19 RDN</td>
<td>status &lt;&gt; 3 (yet)</td>
<td>62 X&lt;&gt;0?</td>
<td>taxable exhausted?</td>
</tr>
<tr>
<td>20 SF 09</td>
<td>rather than all</td>
<td>63 RDN</td>
<td>skip calculation</td>
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<td>21 E2</td>
<td>brackets * 100</td>
<td>64 R</td>
<td>extract brkt value</td>
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<tr>
<td>22</td>
<td>select routine by status</td>
<td>65 1 E2</td>
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<td>23 GTO IND</td>
<td>status = 1</td>
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<td>24 LBL 01</td>
<td>brkt incremt data</td>
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<td>25 .2311102</td>
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<td>step 57</td>
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<td>end program</td>
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<td>status = 3</td>
<td>84 X&lt;&gt; 28</td>
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<td>status = 2</td>
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<td>status = 5</td>
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<td>96 ENTER↑</td>
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<td>98 XEQ 11</td>
<td>step 57</td>
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<td>99 .3132325</td>
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<td>100 XEQ 12</td>
<td>step 60</td>
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<td>101 .53</td>
<td>more brackets</td>
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<td>102 ENTER↑</td>
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<td>103 .381</td>
<td>more multipliers</td>
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<td>104 XEQ 11</td>
<td>step 57</td>
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<td>105 106</td>
<td>big bracket</td>
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<tr>
<td>106 XEQ 09</td>
<td>step 71</td>
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<td>107 159</td>
<td>last bracket</td>
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<td>108 XEQ 09</td>
<td>step 71</td>
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<td>109 LBL 10</td>
<td>output and end</td>
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<td>110 RCL 27</td>
<td>tax accumulator</td>
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<td>111 50</td>
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<td>112 FS?C 09</td>
<td>status = 3?</td>
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<td>113 ST+ X</td>
<td>100</td>
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<tr>
<td>114 *</td>
<td>restore magnitude</td>
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<tr>
<td>115 &quot;TX82&quot;</td>
<td>of tax</td>
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<td>116 FS?C 10</td>
<td>routine?</td>
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<td>117 RTN</td>
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<td>118 &quot;¬&quot;</td>
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<td>119 XEQ &quot;X&quot;</td>
<td>output tax</td>
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<td>122 END</td>
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<tr>
<td>01 LBL &quot;T3&quot;</td>
<td>user entry point</td>
<td>46 1.122224</td>
<td>step 62</td>
</tr>
<tr>
<td>02 SF 12</td>
<td>print double wide</td>
<td>345</td>
<td>more bracket data</td>
</tr>
<tr>
<td>03 &quot;83 TAX RATE&quot;</td>
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<td>47 XEQ 11</td>
<td>step 65</td>
</tr>
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<td>04 CLX</td>
<td>initialize</td>
<td>48 .4142445</td>
<td>more brackets</td>
</tr>
<tr>
<td>05 XEQ &quot;U&quot;</td>
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<td>50 1.06</td>
<td>more multipliers</td>
</tr>
<tr>
<td>06 CF 10</td>
<td>status prompt</td>
<td>51 ENTER↑</td>
<td>step 62</td>
</tr>
<tr>
<td>07 XEQ &quot;Z&quot;</td>
<td>line 37</td>
<td>52 .5442</td>
<td>big bracket</td>
</tr>
<tr>
<td>08 21</td>
<td>taxable inc prompt</td>
<td>53 XEQ 11</td>
<td>step 76</td>
</tr>
<tr>
<td>09 STO 00</td>
<td>reset pointer</td>
<td>54 142</td>
<td>bigger bracket</td>
</tr>
<tr>
<td>10 &quot;TXABL&quot;</td>
<td>taxable inc prompt</td>
<td>55 XEQ 09</td>
<td>step 76</td>
</tr>
<tr>
<td>11 XEQ &quot;Z&quot;</td>
<td>not a subroutine</td>
<td>56 256</td>
<td>last bracket</td>
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<tr>
<td>12 GTO 00</td>
<td>skip subroutine</td>
<td>57 XEQ 09</td>
<td>step 76</td>
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<tr>
<td>13 LBL &quot;R&quot;</td>
<td>sub. entry point</td>
<td>58 CF @39</td>
<td>begin program</td>
</tr>
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<td>14 SF 10</td>
<td>subroutine flag</td>
<td>59 XEQ 09</td>
<td>store multipliers</td>
</tr>
<tr>
<td>15 LBL 00</td>
<td>from step 12</td>
<td>60 .5442</td>
<td>get bracket data</td>
</tr>
<tr>
<td>16 ENTER↑</td>
<td>taxable into Y</td>
<td>61 GTO 10</td>
<td>get taxable</td>
</tr>
<tr>
<td>17 CLX</td>
<td>clear tax accumulator</td>
<td>62 LBL 11</td>
<td>taxable exhausted?</td>
</tr>
<tr>
<td>18 STO 27</td>
<td>retrieve taxable</td>
<td>63 STO 28</td>
<td>skip calculation</td>
</tr>
<tr>
<td>19 RDN</td>
<td>status &lt;&gt; 3 (yet)</td>
<td>64 RDN</td>
<td>retrieve bracket</td>
</tr>
<tr>
<td>20 SF 09</td>
<td>rather than all</td>
<td>65 LBL 12</td>
<td>data</td>
</tr>
<tr>
<td>21 1 E2</td>
<td>brackets ≠ 100</td>
<td>66 RDN</td>
<td>extract brkt value</td>
</tr>
<tr>
<td>22 /</td>
<td>select routine</td>
<td>67 X&lt;=0?</td>
<td>rem. bracket data</td>
</tr>
<tr>
<td>23 GTO IND</td>
<td>by status</td>
<td>68 RTN</td>
<td>taxable</td>
</tr>
<tr>
<td>24 LBL 01</td>
<td>bracket increment</td>
<td>69 R↑</td>
<td>taxable-bracket</td>
</tr>
<tr>
<td>25 .2311104</td>
<td>data</td>
<td>70 1 E2</td>
<td>taxable in/above</td>
</tr>
<tr>
<td>1</td>
<td>status = 1</td>
<td>71 *</td>
<td>this bracket?</td>
</tr>
<tr>
<td>26 ENTER↑</td>
<td>% multiplier data</td>
<td>72 FRC</td>
<td>calculate!</td>
</tr>
<tr>
<td>27 1.122222</td>
<td>step 62</td>
<td>73 X&lt;&gt;Y</td>
<td>destroy brkt data</td>
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<td>more bracket data</td>
<td>74 LASTX</td>
<td>next multiplier</td>
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<td>step 62</td>
<td>75 INT</td>
<td>multiplier data</td>
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<td>29 .2321213</td>
<td>more bracket data</td>
<td>76 LBL 09</td>
<td>remaining data</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>77 -</td>
<td>data</td>
</tr>
<tr>
<td>30 XEQ 12</td>
<td>step 65</td>
<td>78 X&gt;0?</td>
<td>remaining multipliers</td>
</tr>
<tr>
<td>31 .5353537</td>
<td>more bracket data</td>
<td>79 GTO 06</td>
<td>multiplier</td>
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<tr>
<td>4</td>
<td></td>
<td>80 RDN</td>
<td>% taxable/bracket</td>
</tr>
<tr>
<td>32 ENTER↑</td>
<td>more multipliers</td>
<td>81 CLX</td>
<td>add to tax</td>
</tr>
<tr>
<td>33 .44455</td>
<td>step 62</td>
<td>82 RTN</td>
<td>remaining taxable</td>
</tr>
<tr>
<td>34 XEQ 11</td>
<td>last bracket</td>
<td>83 LBL 06</td>
<td>bracket data</td>
</tr>
<tr>
<td>35 138</td>
<td>end program</td>
<td>84 10</td>
<td>more brackets?</td>
</tr>
<tr>
<td>36 XEQ 09</td>
<td>status = 3</td>
<td>85 ST+ 28</td>
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</tr>
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<td>37 GTO 10</td>
<td>status = 2</td>
<td>86 CLX</td>
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<td>38 LBL 03</td>
<td>status = 5</td>
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<td>bracket data</td>
<td>88 FRC</td>
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</tr>
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<td>40 2</td>
<td></td>
<td>89 X&lt;&gt;Y</td>
<td></td>
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<td>41 *</td>
<td>multipliers</td>
<td>90 INT</td>
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<td>42 LBL 02</td>
<td>status = 2</td>
<td>91 %</td>
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<td>43 LBL 05</td>
<td>status = 5</td>
<td>92 ST+ 27</td>
<td></td>
</tr>
<tr>
<td>44 .3421214</td>
<td>bracket data</td>
<td>93 RDN</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>94 X&lt;&gt;Y</td>
<td></td>
</tr>
<tr>
<td>45 ENTER↑</td>
<td>multipliers</td>
<td>95 X&gt;0?</td>
<td></td>
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<th>LISTING</th>
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<tr>
<td>GTO 12</td>
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<tr>
<td>X&lt;&gt;Y</td>
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<td>.2321212</td>
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<td>step 62</td>
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<tr>
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</tr>
<tr>
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<td>step 76</td>
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<tr>
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<tr>
<td>XEQ 09</td>
<td>step 76</td>
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<td>status = 3?</td>
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<td>&quot;TX83&quot;</td>
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<td>routine?</td>
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<tr>
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<td>output tax</td>
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<tr>
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PROGRAM REGISTERS NEEDED: 48

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<td>61 : 70</td>
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<td>18</td>
<td>70 : 81</td>
</tr>
</tbody>
</table>

**Program Registers Needed:** 51

- **HEWLETT-PACKARD**
- **Solutions Book:** 1982 Taxes
PROGRAM DESCRIPTION

SCHEDULE D
CAPITAL GAINS AND LOSSES

PURPOSE -
The purpose of this program is to aid the user in calculating capital gains and losses using Schedule D.

FEATURES/WARNINGS -
The program is relatively straightforward in its operation. Once begun, it steps through the tax form displaying values it assumes to be correct for each line of the form.

Lines that require input from the user are denoted by a colon (":"), between the line name (a string of five characters) and the current line value (some number). An example of a line of this type is "STATS: 2.0", where "STATS" is an abbreviation for "Filing Status", the colon indicates that this is a user-specified value, and the "2." is the current value. At any time the user encounters a program display similar to the one just described, its line value may be used as is by pressing [R/S] (to continue the program) or may be changed by keying in some new value (using the numeric keys) and pressing [R/S] (to continue the program). Manual calculations may be performed at this time using the HP-41's stack in order to arrive at the desired value to be input.

Lines that represent values calculated by the program, and which should be copied to the form, are denoted by an equal sign ("=") between the line name and the line value. An example of this is "LIN4F= -8,000.0", where "LIN4F" is an abbreviation for "line 4f", the equal sign indicates that this is a program-calculated value, and "-8,000.0" is the current line value. At any time a program display similar to the one just described is encountered, its line value MUST NOT be changed by the user (i.e., by pressing any key other than [R/S]), or the program may perform calculations based on the altered (and incorrect) value.

The program symbolizes losses as negative numbers and gains as positive ones. The user must do the same. All inputs representing capital losses must be negative.

The program works equally well in any display mode (FIX, SCI, ENG, 0 through 9), but best results will be obtained using either FIX 0 or 2 which correspond to whole dollar amounts and dollars-and-cents amounts respectively. Money values may be entered in either fashion regardless of the display mode and will be remembered by the program exactly as they are input. However, the display mode does have an effect on the program's output. All output
values will be generated using the input values rounded to the current display mode (viz., an input of 9.25 in FIX 0 will be rounded to 9 before it is used in a calculation whereas the same value in FIX 2 will not be altered), and will cause small but perhaps significant deviations in output. The fact that the values are retained exactly as input allows the user to rerun the program with no new inputs in another display mode and quickly see the difference between whole dollar and dollars- and cents input.

The program does no error checking! All input values are assumed to be correct, regardless of their values, and are used as such. Erroneous values will usually not halt the program. The program may either be run to completion, or manually halted and restarted. Either way, the valid inputs may be skipped by pressing [R/S] and the invalid inputs corrected by entering the proper value when the line is displayed.

The program is compatible with printers. If a printer is attached, the program assumes it is on. All input values are echoed and all output values are streamed to the printer. With respect to the user, input values are treated in the same fashion regardless of the printer's presence. The output of program-generated values, on the other hand, differs dramatically based on the printer's existence. Without a printer, the program halts at each output value in the same fashion that it does when asking for input, thus allowing the user to manually record the value. With a printer, program-generated output does not halt program execution, is not displayed and is recorded on the printer, thus minimizing user interaction.

One feature of the program allows the user to skip all input prompts if the existing values are known to be correct. In this mode, the user without a printer may view only those lines calculated by the program. The user with a printer may rapidly generate an uninterrupted printout of both input and output. This mode is active when the flag 0 annunciator is lit in the display.
### Sample Problem

Fill out the form on pages 61 and 62.

The example assumes:

* that programs "SD" (Schedule D) and "0" (common subroutines) have been loaded into memory.

* there are 56 available data registers (i.e., SIZE has been set to a number greater than 55).

* the program is in "input mode." This is accomplished by pressing [XEQ] "P" repeatedly (no more than twice is necessary) until the annunciator for flag 0 cannot be seen in the display.

* all pertinent data registers contain the value 0. This is only for convenience in describing the example and is not required. If the user desires to duplicate the example exactly, and is certain that no important data will be destroyed, the computer's CLRG function may be employed to clear data memory (via [XEQ] "CLRG").

* the display mode is FIX 0.

* flags 28 and 29 are set (the HP-41 decimal point and digit grouping flags).

### Solution

<table>
<thead>
<tr>
<th>Display</th>
<th>Input</th>
<th>Keystrokes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCHEDULE D</td>
<td>[XEQ] &quot;SD&quot;</td>
<td>Identifies the program.</td>
<td></td>
</tr>
<tr>
<td>STATS: 0.</td>
<td>2</td>
<td>[R/S]*</td>
<td>Lines 1-5 of form 1040: filing status. If this program was called from the 1040 program, this prompt will be skipped.</td>
</tr>
<tr>
<td>TXABL: 0.</td>
<td>50234</td>
<td>[R/S]</td>
<td>Line 37 from form 1040: taxable income.</td>
</tr>
<tr>
<td>TOT1F: 0.</td>
<td>-5000</td>
<td>[R/S]</td>
<td>Total of line 1f: losses.</td>
</tr>
<tr>
<td>TOT1G: 0.</td>
<td>6000</td>
<td>[R/S]</td>
<td>Total of line 1g: gains.</td>
</tr>
<tr>
<td>LIN2A: 0.</td>
<td>85</td>
<td>[R/S]</td>
<td>Line 2a: gain from sale of principal residence.</td>
</tr>
<tr>
<td>LIN2b: 0.</td>
<td>2400</td>
<td>[R/S]</td>
<td>Line 2b: short-term capital gain from installment sales.</td>
</tr>
<tr>
<td>LIN3F: 0.</td>
<td>-3000</td>
<td>[R/S]</td>
<td>Line 3f: loss from partnerships and fiduciaries.</td>
</tr>
<tr>
<td>LIN4F= -8,000.</td>
<td></td>
<td>[R/S]*</td>
<td>Line 4f: total losses.</td>
</tr>
<tr>
<td>LIN4G= 8,485.</td>
<td></td>
<td>[R/S]*</td>
<td>Line 4f: total gains.</td>
</tr>
<tr>
<td>DISPLAY</td>
<td>INPUT</td>
<td>KEYSTROKES</td>
<td>COMMENTS</td>
</tr>
<tr>
<td>-----------------</td>
<td>--------</td>
<td>------------</td>
<td>----------</td>
</tr>
<tr>
<td>LINE5= 485.</td>
<td>[R/S]*</td>
<td>Line 5: net gain (in this case).</td>
<td></td>
</tr>
<tr>
<td>LINE6: 0.</td>
<td>[R/S]</td>
<td>Line 6: carryover.</td>
<td></td>
</tr>
<tr>
<td>LINE7= 485.</td>
<td>[R/S]*</td>
<td>Line 7: net short term gain.</td>
<td></td>
</tr>
<tr>
<td>TOT8F: 0.</td>
<td>-8000</td>
<td>[R/S]</td>
<td>Line 8f: total long term gains.</td>
</tr>
<tr>
<td>TOT8G: 0.</td>
<td>9,500.</td>
<td>[R/S]</td>
<td>Line 8g: total long term gains.</td>
</tr>
<tr>
<td>LIN9a: 0.</td>
<td>450</td>
<td>[R/S]</td>
<td>Line 9a: gain from sale of principal residence.</td>
</tr>
<tr>
<td>LIN9b: 0.</td>
<td>630</td>
<td>[R/S]</td>
<td>Line 9b: long term capital gain from installment sales.</td>
</tr>
<tr>
<td>LN10F: 0.</td>
<td>[R/S]</td>
<td>Line 10f: loss from partnerships and fiduciaries.</td>
<td></td>
</tr>
<tr>
<td>LN10G: 0.</td>
<td>750</td>
<td>[R/S]</td>
<td>Line 10g: gain from partnerships and fiduciaries.</td>
</tr>
<tr>
<td>LN11F= -8,000.</td>
<td>[R/S]*</td>
<td>Line 11f: total losses.</td>
<td></td>
</tr>
<tr>
<td>LIN14: 0.</td>
<td>1760</td>
<td>[R/S]*</td>
<td>Line 14: gain from form 4797 line 5(a)(1).</td>
</tr>
<tr>
<td>LIN15: 0.</td>
<td>863</td>
<td>[R/S]</td>
<td>Line 15: your share of net long term gain from small business corporations.</td>
</tr>
<tr>
<td>LIN16= 6,496.</td>
<td>[R/S]</td>
<td>Line 16: sum lines 12 through 15.</td>
<td></td>
</tr>
<tr>
<td>LIN17: 0.</td>
<td>-8,000.</td>
<td>[R/S]</td>
<td>Line 17: Long term loss carryover.</td>
</tr>
<tr>
<td>LIN18= -1,504.</td>
<td>[R/S]*</td>
<td>Line 18: net long term loss.</td>
<td></td>
</tr>
<tr>
<td>LIN19= -1,019</td>
<td>[R/S]*</td>
<td>Line 19: net loss. Lines 20 through 22 will be skipped.</td>
<td></td>
</tr>
<tr>
<td>LIN23= -510.</td>
<td>[R/S]*</td>
<td>Line 23: line (ii) is valid.</td>
<td></td>
</tr>
<tr>
<td>LIN24= -510.</td>
<td>[R/S]*</td>
<td>Line 24: line (i) is smallest.</td>
<td></td>
</tr>
<tr>
<td>LIN25= 0.</td>
<td>[R/S]*</td>
<td>Line 25: line 7 is gain. Lines 26 through 30 will be skipped.</td>
<td></td>
</tr>
<tr>
<td>LIN32= -1,504.</td>
<td>[R/S]*</td>
<td>Line 32: line 18.</td>
<td></td>
</tr>
<tr>
<td>LIN33= 485.</td>
<td>[R/S]*</td>
<td>Line 33: line 7.</td>
<td></td>
</tr>
<tr>
<td>LIN34= -1,019.</td>
<td>[R/S]*</td>
<td>Line 34: line 33 + line 32.</td>
<td></td>
</tr>
<tr>
<td>LIN35= -1,020.</td>
<td>[R/S]*</td>
<td>Line 35: line 31 * 2.</td>
<td></td>
</tr>
<tr>
<td>LIN36= 1.</td>
<td>[R/S]*</td>
<td>Line 36: line 35 from line 34.</td>
<td></td>
</tr>
</tbody>
</table>

1.

* [R/S] in this instance is not necessary if a printer is attached.
**Capital Gains and Losses**

Examples of property to be reported on this Schedule are gains and losses on stocks, bonds, and similar investments, and gains (but not losses) on personal assets such as a home or jewelry.

Attach to Form 1040. See Instructions for Schedule D (Form 1040).

Name(s) as shown on Form 1040

<table>
<thead>
<tr>
<th>Name(s) as shown on Form 1040</th>
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</thead>
</table>

**Part I**  
Short-term Capital Gains and Losses—Assets Held One Year or Less

<table>
<thead>
<tr>
<th>a. Kind of property and description (Example, 100 shares 7% preferred of &quot;Z&quot; Co.)</th>
<th>b. Date acquired (Mo., day, yr.)</th>
<th>c. Date sold (Mo., day, yr.)</th>
<th>d. Gross sales price less expense of sale</th>
<th>e. Cost or other basis, as adjusted (see instructions page 23)</th>
<th>f. LOSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2a Gain from sale or exchange of a principal residence held one year or less, from Form 2119, lines 7 or 11.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2b Short-term capital gain from installment sales from Form 6252, line 21 or 29.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Net short-term gain or (loss) from partnerships and fiduciaries.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Add lines 1 through 3 in column f and column g.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Combine line 4, column f and line 4, column g and enter the net gain or (loss).</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>6 Short-term capital loss carryover from years beginning after 1969.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Net short-term gain or (loss), combine lines 5 and 6</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Line</th>
<th>a. Kind of property and description (Example, 100 shares 7% preferred of &quot;Z&quot; Co.)</th>
<th>b. Date acquired (Mo., day, yr.)</th>
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<tr>
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<td></td>
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<tr>
<td>2b</td>
<td>Short-term capital gain from installment sales from Form 6252, line 21 or 29.</td>
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<tr>
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<td>Net short-term gain or (loss) from partnerships and fiduciaries.</td>
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</tr>
<tr>
<td>4</td>
<td>Add lines 1 through 3 in column f and column g.</td>
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<tr>
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<td>Combine line 4, column f and line 4, column g and enter the net gain or (loss).</td>
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<tr>
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<tr>
<td>7</td>
<td>Net short-term gain or (loss), combine lines 5 and 6</td>
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<td></td>
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<tr>
<td>2a</td>
<td>Gain from sale or exchange of a principal residence held one year or less, from Form 2119, lines 7 or 11.</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2b</td>
<td>Short-term capital gain from installment sales from Form 6252, line 21 or 29.</td>
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<td></td>
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<td></td>
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<td>3</td>
<td>Net short-term gain or (loss) from partnerships and fiduciaries.</td>
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<td>4</td>
<td>Add lines 1 through 3 in column f and column g.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Combine line 4, column f and line 4, column g and enter the net gain or (loss).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Short-term capital loss carryover from years beginning after 1969.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Net short-term gain or (loss), combine lines 5 and 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Part II**  
Long-term Capital Gains and Losses—Assets Held More Than One Year

<table>
<thead>
<tr>
<th>a. Kind of property and description (Example, 100 shares 7% preferred of &quot;Z&quot; Co.)</th>
<th>b. Date acquired (Mo., day, yr.)</th>
<th>c. Date sold (Mo., day, yr.)</th>
<th>d. Gross sales price less expense of sale</th>
<th>e. Cost or other basis, as adjusted (see instructions page 23)</th>
<th>f. LOSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2a Gain from sale or exchange of a principal residence held more than one year, from Form 2119, lines 7, 11, 16 or 18.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2b Long-term capital gain from installment sales from Form 6252, line 21 or 29.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Net long-term gain or (loss) from partnerships and fiduciaries.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 Add lines 8 through 10 in column f and column g.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 Combine line 11, column f and line 11, column g and enter the net gain or (loss).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 Capital gain distributions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 Enter gain from Form 4797, line 5(a)(1).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 Enter your share of net long-term gain from small business corporations (Subchapter S).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 Combine lines 12 through 15.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17 Long-term capital loss carryover from years beginning after 1969.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 Net long-term gain or (loss), combine lines 16 and 17.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Line</th>
<th>a. Kind of property and description (Example, 100 shares 7% preferred of &quot;Z&quot; Co.)</th>
<th>b. Date acquired (Mo., day, yr.)</th>
<th>c. Date sold (Mo., day, yr.)</th>
<th>d. Gross sales price less expense of sale</th>
<th>e. Cost or other basis, as adjusted (see instructions page 23)</th>
<th>f. LOSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2a</td>
<td>Gain from sale or exchange of a principal residence held more than one year, from Form 2119, lines 7, 11, 16 or 18.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2b</td>
<td>Long-term capital gain from installment sales from Form 6252, line 21 or 29.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Net long-term gain or (loss) from partnerships and fiduciaries.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Add lines 8 through 10 in column f and column g.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Combine line 11, column f and line 11, column g and enter the net gain or (loss).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Capital gain distributions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Enter gain from Form 4797, line 5(a)(1).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Enter your share of net long-term gain from small business corporations (Subchapter S).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Combine lines 12 through 15.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Long-term capital loss carryover from years beginning after 1969.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Net long-term gain or (loss), combine lines 16 and 17.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Complete this form on reverse. However, if you have capital loss carryovers from years beginning before 1970, do not complete Parts III or V. See Form 4798 instead.

For Paperwork Reduction Act Notice, see Form 1040 instructions
## Part III  Summary of Parts I and II

19 Combine lines 7 and 18, and enter the net gain or (loss) here.

   Note: If line 19 is a loss, skip lines 20 through 22 and complete lines 23 and 24. If line 19 is a gain complete lines 20 through 22 and skip lines 23 and 24.

20 If line 19 shows a gain, enter the smaller of line 18 or line 19. Enter zero if there is a loss or no entry on line 18.

21 Enter 60% of line 20.

   Note: If line 19 is a loss, skip lines 20 through 22 and complete lines 23 and 24.

   If line 19 shows a gain, enter the smaller of line 18 or line 19. Enter zero if there is a loss or no entry on line 18.

22 Subtract line 21 from line 19. Enter here and on Form 1040, line 13.

23 If line 19 shows a loss, enter one of the following amounts:
   (i) If line 7 is zero or a net gain, enter 50% of line 19;
   (ii) If line 18 is zero or a net gain, enter line 19; or
   (iii) If line 7 and line 18 are net losses, enter amount on line 7 added to 50% of the amount on line 18.

   Enter here and as a loss on Form 1040, line 13, the smallest of:
   (i) The amount on line 23;
   (ii) 3,000 ($1,500 if married and filing a separate return); or
   (iii) Taxable income, as adjusted.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>-1,019</td>
</tr>
<tr>
<td>20</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>-510</td>
</tr>
<tr>
<td>24</td>
<td>-510</td>
</tr>
</tbody>
</table>

## Part IV  Complete this Part Only if You Elect Out of the Installment Method And Report a Note or Other Obligation at Less Than Full Face Value

- Check here if you elect out of the installment method.
- Enter the face amount of the note or other obligation.
- Enter the percentage of valuation of the note or other obligation.

## Part V  Computation of Post-1969 Capital Loss Carryovers from 1982 to 1983

(Complete this part if the loss on line 23 is more than the loss on line 24)

Note: You do not have to complete Part V on the copy you file with IRS.

### Section A.—Short-term Capital Loss Carryover

25 Enter loss shown on line 7; if none, enter zero and skip lines 26 through 30—then go to line 31.

26 Enter gain shown on line 18. If that line is blank or shows a loss, enter zero.

27 Reduce any loss on line 25 to the extent of any gain on line 26.

28 Enter amount shown on line 24.

29 Enter smaller of line 27 or 28.

30 Subtract line 29 from line 27. This is your short-term capital loss carryover from 1982 to 1983.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>26</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

### Section B.—Long-term Capital Loss Carryover

31 Subtract line 29 from line 28 (Note: If you skipped lines 26 through 30, enter amount from line 24).

32 Enter loss from line 18; if none, enter zero and skip lines 33 through 36.

33 Enter gain shown on line 7. If that line is blank or shows a loss, enter zero.

34 Reduce any loss on line 32 to the extent of any gain on line 33.

35 Multiply amount on line 31 by 2.

36 Subtract line 35 from line 34. This is your long-term capital loss carryover from 1982 to 1983.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>-510</td>
</tr>
<tr>
<td>32</td>
<td>-1,019</td>
</tr>
<tr>
<td>33</td>
<td>485</td>
</tr>
<tr>
<td>34</td>
<td>-1,019</td>
</tr>
<tr>
<td>35</td>
<td>-1,020</td>
</tr>
<tr>
<td>36</td>
<td>1</td>
</tr>
</tbody>
</table>
### USER INSTRUCTIONS

**INSTRUCTIONS** | **INPUT** | **KEYSTROKES** | **DISPLAY**
--- | --- | --- | ---
1. At a minimum, load the following programs: "SD" (Schedule D) and "0" (misc. routines). | | | |
2. Allocate data registers (minimum 56). | | | | [XEQ] "SIZE" 056
3. Select an appropriate display format. | | [shift][FIX] n |
4. Select either "prompting" (flag 0 set) or "non-prompting" (flag 0 clear) mode. Pressing [XEQ] "P" toggles between these modes. | | | [XEQ] "P"
5. Run the Schedule D program. | | | [XEQ] "SD" SCHEDULE D
6. This display identifies the program. | | | |
7. Enter one of lines 1-5: your filing status. | status | | | | | STATS: x
8. Enter Line 37 from form 1040: taxable income. taxable | | | TXABL: x
9. Enter the total of column 1f. This number must be negative since it's a loss. | total | | | | | TOT1F: x
10. Enter the total of column 1g. | total | | | | | LIN2a: x
11. Enter Line 2a: gain from sale of principal residence. | gain | | | | | LIN2b: x
12. Enter Line 2b: short-term capital gain from installment sales. | gain | | | | | LIN3F: x
13. Enter Line 3f: loss from partnerships and fiduciaries. This number should be negative. If a value is entered here, line 3g will not be prompted for. | loss | | | | | LIN4F: x
14. If line 3f was zero, enter line 3g: gain from partnerships and fiduciaries. This number should be positive.  

15. Output of line 4f: total losses.  

16. Output of line 4g: total gains.  

17. Output of line 5: net gain or loss.  

18. Enter line 6: short term capital loss carryover.  


20. Enter the total of column 8f. This number must be negative since it is a loss. total loss  

21. Enter the total of column 8g. total gain  

22. Enter line 9a: gain from sale of principal residence.  

23. Enter line 9b: long term capital gain from installment sales.  

24. Enter line 10f: loss from partnerships and fiduciaries. If a value is entered here, line 10g will be skipped. loss  

25. Enter line 10g: gain from partnerships and fiduciaries. If a value was entered for line 10f, this prompt will be skipped. gain  


27. Output of line 11g: total gains.  

<table>
<thead>
<tr>
<th>Instructions</th>
<th>Input</th>
<th>Keystrokes</th>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.</td>
<td></td>
<td>[R/S]</td>
<td>LIN4F= x</td>
</tr>
<tr>
<td>15.</td>
<td></td>
<td>[R/S]*</td>
<td>LIN4G= x</td>
</tr>
<tr>
<td>16.</td>
<td></td>
<td>[R/S]*</td>
<td>LINE5= x</td>
</tr>
<tr>
<td>17.</td>
<td></td>
<td>[R/S]*</td>
<td>LINE6: x</td>
</tr>
<tr>
<td>18.</td>
<td>carryover</td>
<td>[R/S]</td>
<td>LINE7= x</td>
</tr>
<tr>
<td>19.</td>
<td></td>
<td>[R/S]*</td>
<td>TOT8F: x</td>
</tr>
<tr>
<td>20.</td>
<td></td>
<td>[R/S]</td>
<td>TOT8G: x</td>
</tr>
<tr>
<td>21.</td>
<td></td>
<td>[R/S]</td>
<td>LIN9a: x</td>
</tr>
<tr>
<td>22.</td>
<td></td>
<td>[R/S]</td>
<td>LIN9b: x</td>
</tr>
<tr>
<td>23.</td>
<td></td>
<td>[R/S]</td>
<td>LN10F: x</td>
</tr>
<tr>
<td>24.</td>
<td>loss</td>
<td>[R/S]</td>
<td>LN10G: x</td>
</tr>
<tr>
<td>25.</td>
<td>gain</td>
<td>[R/S]</td>
<td>LN11F= x</td>
</tr>
<tr>
<td>26.</td>
<td></td>
<td>[R/S]*</td>
<td>LN11G= x</td>
</tr>
<tr>
<td>27.</td>
<td></td>
<td>[R/S]*</td>
<td>LIN12= x</td>
</tr>
<tr>
<td>INSTRUCTIONS</td>
<td>INPUT</td>
<td>KEYS</td>
<td>DISPLAY</td>
</tr>
<tr>
<td>--------------</td>
<td>-------</td>
<td>------</td>
<td>---------</td>
</tr>
<tr>
<td>28. Output of line 12: net gain.</td>
<td>[R/S]*</td>
<td>LIN13: x</td>
<td></td>
</tr>
<tr>
<td>29. Enter line 13: capital gains distributions.</td>
<td>[R/S]</td>
<td>LIN14: x</td>
<td></td>
</tr>
<tr>
<td>30. Enter line 14: gain from form 4797 line 5(a)(1).</td>
<td>[R/S]</td>
<td>LIN15: x</td>
<td></td>
</tr>
<tr>
<td>31. Enter line 15: your share of net long term gain from small business corporations.</td>
<td>[R/S]</td>
<td>LIN16= x</td>
<td></td>
</tr>
<tr>
<td>32. Output of line 16: sum lines 12 through 15.</td>
<td>[R/S]*</td>
<td>LIN17: x</td>
<td></td>
</tr>
<tr>
<td>33. Enter line 17: Long term loss carryover.</td>
<td>[R/S]</td>
<td>LIN18= x</td>
<td></td>
</tr>
<tr>
<td>34. Output of line 18: net long term loss.</td>
<td>[R/S]*</td>
<td>LIN19= x</td>
<td></td>
</tr>
<tr>
<td>35. Output of line 19: net gain or loss. If this line is negative, lines 20 through 22 will be skipped and lines 23 through 24 will be output. If this line is positive, lines 23 through 24 will be skipped and lines 20 through 22 will be output.</td>
<td>[R/S]*</td>
<td>LIN20= x</td>
<td></td>
</tr>
<tr>
<td>36. Output line 20: the smaller of lines 18 and 19.</td>
<td>[R/S]*</td>
<td>LIN21= x</td>
<td></td>
</tr>
<tr>
<td>37. Output line 21: 60% of line 20.</td>
<td>[R/S]*</td>
<td>LIN22= x</td>
<td></td>
</tr>
<tr>
<td>38. Output line 22: line 21 from line 19.</td>
<td>[R/S]*</td>
<td>LIN23= x</td>
<td></td>
</tr>
</tbody>
</table>
### INSTRUCTIONS

<table>
<thead>
<tr>
<th>Line</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>39.</td>
<td>Output of Line 23: If line 7 &gt;= 0 then output 50% of Line 9. If line 18 &gt;= 0 then output line 19, else output line 7 + 50% of line 8.</td>
</tr>
<tr>
<td>40.</td>
<td>Output Line 24: the smallest of Line 23, $3000 ($1500 if status 3) and taxable income.</td>
</tr>
<tr>
<td>41.</td>
<td>If Line 24 shows a greater loss than Line 23 then the program will halt at this point.</td>
</tr>
<tr>
<td>42.</td>
<td>Output Line 25: output line 7 if it is a loss, else output 0. If 0, skip lines 25 through 30.</td>
</tr>
<tr>
<td>43.</td>
<td>Output Line 26: line 18 if a gain, otherwise 0.</td>
</tr>
<tr>
<td>44.</td>
<td>Output Line 27: output line 25 + Line 26. If positive, output 0.</td>
</tr>
<tr>
<td>46.</td>
<td>Output Line 29: the smaller of lines 27 and 28.</td>
</tr>
<tr>
<td>47.</td>
<td>Output Line 30: line 29 from line 27.</td>
</tr>
<tr>
<td>49.</td>
<td>Output of Line 32: Line 18 if a loss, 0 if not.</td>
</tr>
<tr>
<td>50.</td>
<td>Output of Line 33: Line 7 if a gain, otherwise 0.</td>
</tr>
</tbody>
</table>

---

### KEystrokes

<table>
<thead>
<tr>
<th>Line</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>39.</td>
<td>[R/S]* LIN24= x</td>
</tr>
<tr>
<td>40.</td>
<td>[R/S]* LIN25= x</td>
</tr>
<tr>
<td>41.</td>
<td>[R/S]* LIN26= x</td>
</tr>
<tr>
<td>42.</td>
<td>[R/S]* LIN27= x</td>
</tr>
<tr>
<td>43.</td>
<td>[R/S]* LIN28= x</td>
</tr>
<tr>
<td>44.</td>
<td>[R/S]* LIN29= x</td>
</tr>
<tr>
<td>45.</td>
<td>[R/S]* LIN30= x</td>
</tr>
<tr>
<td>46.</td>
<td>[R/S]* LIN31= x</td>
</tr>
<tr>
<td>47.</td>
<td>[R/S]* LIN32= x</td>
</tr>
<tr>
<td>48.</td>
<td>[R/S]* LIN33= x</td>
</tr>
<tr>
<td>49.</td>
<td>[R/S]* LIN34= x</td>
</tr>
<tr>
<td>INSTRUCTIONS</td>
<td>INPUT</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>51. Output of line 34: Line</td>
<td></td>
</tr>
<tr>
<td>33 + line 32. If greater</td>
<td></td>
</tr>
<tr>
<td>than 0, output 0.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>52. Output line 35:</td>
<td></td>
</tr>
<tr>
<td>line 31 * 2.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>53. Output of line 36:</td>
<td></td>
</tr>
<tr>
<td>line 35 from line 34.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>54. The last output is</td>
<td></td>
</tr>
<tr>
<td>left in the X-register.</td>
<td></td>
</tr>
</tbody>
</table>

* [R/S] in this instance is not necessary if a printer is attached.
PROGRAM DETAIL -

The form Schedule D program is 267 steps and 665 bytes (95 registers) long. It requires one other program: the miscellaneous routines program—233 bytes. At a minimum, 56 data registers are needed, totalling 184.3 registers for operation.

The program has one entry point, global label "SD".

Aside from the flags manipulated by the subroutines called, the program itself manipulates the following flags:

flag 06 : set = to enable the accumulate feature of routine "X"
flag 12 : set = print double wide (for the printed program identifier)
           clear = print single wide

The data registers used by the form 1040 program are preserved with the exception of registers 1 and 21. The following data registers are used:

00 = register index for data manipulation
01 = lines 1 through 5, form 1040: filing status
21 = line 37, form 1040: taxable income
27 = accumulator index
28 = total of column 1f
29 = total of column 1g
30 = line 2a: gain from sale or exchange of a principal residence
31 = line 2b: short-term capital gain from installment sales
32 = line 3f: net short-term loss from partnerships and fiduciaries
33 = line 3g: net short-term gain from partnerships and fiduciaries
34 = line 4g: total short-term gain
35 = line 5: total gain or loss
36 = line 6: short-term capital loss carryover
37 = line 7: net short-term gain or loss
38 = total of column 8f
39 = total of column 8g
40 = line 9a: gain from sale or exchange of a principal residence
41 = line 9b: long-term capital gain from installment sales
42 = line 10f: net long-term loss from partnerships and fiduciaries
43 = line 10g: net long-term gain from partnerships and fiduciaries
45 = line 11g: total long-term gain
46 = line 12: total gain or loss
47 = line 13: capital gains distribution
48 = line 14: gain from form 4797
49 = line 15: your share of net long-term gain from small business corporations
51 = line 16: sum of lines 12 through 15
52 = line 17: long-term capital loss carryover
53 = line 18: net short-term gain or loss
54 = line 21: 60% of line 20
55 = line 24: capital gain or loss
<table>
<thead>
<tr>
<th>LISTING</th>
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<td><code>247 RCL 37</code></td>
<td>line 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>248 X&lt;0?</code></td>
<td>loss?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>249 CLX</code></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>250 XEQ &quot;Y&quot;</code></td>
<td>output line 33</td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>251 &quot;LIN34&quot;</code></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>252 +</code></td>
<td>line 32 + line 33</td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>253 X&gt;0?</code></td>
<td>gain?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>254 CLX</code></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>255 XEQ &quot;Y&quot;</code></td>
<td>output line 34</td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>256 &quot;LIN35&quot;</code></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>257 X&lt;Y</code></td>
<td>line 31</td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>258 2</code></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>259 *</code></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROW</td>
<td>Start</td>
<td>End</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>6</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>11</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>16</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>18</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>21</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>26</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>32</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>36</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>42</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>46</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>50</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>55</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>60</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>63</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>66</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>69</td>
<td>76</td>
<td></td>
</tr>
</tbody>
</table>
PROGRAM DESCRIPTION

FORM 4625
COMPUTATION OF MINIMUM TAX

PURPOSE -

The purpose of this program is to aid the user in the computation of minimum tax using form 4625.

FEATURES/WARNINGS -

The program is relatively straight-forward in its operation. Once begun, it steps through the tax form displaying values it assumes to be correct for each line of the form.

Lines that require input from the user are denoted by a colon (":") between the line name (a string of five characters) and the current line value (some number). An example of a line of this type is "STATS: 2.", where "STATS" is an abbreviation for "Filing Status", the colon indicates that this is a user-specified value, and the "2." is the current value. At any time the user encounters a program display similar to the one just described, its line value may be used as is by pressing [R/S] (to continue the program) or may be changed by keying in some new value (using the numeric keys) and pressing [R/S] (to continue the program). Manual calculations may be performed at this time using the HP-41's stack in order to arrive at the desired value to be input.

Lines that represent values calculated by the program, and which should be copied to the form, are denoted by an equal sign ("=") between the line name and the line value. An example of this is "LINE2= 20,000.", where "LINE2" is an abbreviation for "line 2", the equal sign indicates that this is a program-calculated value, and "20,000." is the current line value. At any time a program display similar to the one just described is encountered, its line value MUST NOT be changed by the user (i.e., by pressing any key other than [R/S]), or the program may perform calculations based on the altered (and incorrect) value.

The program works equally well in any display mode (FIX, SCI, ENG, 0 through 9), but best results will be obtained using either FIX 0 or 2 which correspond to whole dollar amounts and dollars-and-cents amounts respectively. Money values may be entered in either fashion regardless of the display mode and will be remembered by the program exactly as they are input. However, the display mode does have an effect on the program's output. All output values will be generated using the input values rounded to the current display mode (viz., an input of 9.25 in FIX 0 will be rounded to 9 before it is used in a calculation whereas the same value in FIX 2 will not be altered), and will cause small but perhaps significant deviations in output. The fact that the values are retained exactly as input allows the user to rerun the program with no new inputs in another display mode and quickly see the difference between whole dollar and dollars-and-cents input.
The program does no error checking! All input values are assumed to be correct, regardless of their values, and are used as such. Erroneous values will usually not halt the program. The program may either be run to completion, or manually halted and restarted. Either way, the valid inputs may be skipped by pressing [R/S] and the invalid inputs corrected by entering the proper value when the line is displayed.

The program is compatible with printers. If a printer is attached, the program assumes it is on. All input values are echoed and all output values are streamed to the printer. With respect to the user, input values are treated in the same fashion regardless of the printer's presence. The output of program-generated values, on the other hand, differs dramatically based on the printer's existence. Without a printer, the program halts at each output value in the same fashion that it does when asking for input, thus allowing the user to manually record the value. With a printer, program-generated output does not halt program execution, is not displayed and is recorded on the printer, thus minimizing user interaction.

One feature of the program allows the user to skip all input prompts if the existing values are known to be correct. In this mode, the user without a printer may view only those lines calculated by the program. The user with a printer may rapidly generate an uninterrupted printout of both input and output. This mode is active when the flag 0 annunciator is lit in the display.
SAMPLE PROBLEM

Fill out the form on page 79.

The example assumes:

* that programs "MN" (Minimum Tax) and "0" (common subroutines) have been loaded into memory.

* there are 50 available data registers (i.e., SIZE has been set to a number greater than 49).

* the program is in "input mode." This is accomplished by pressing \([\text{XEQ}]\ "P"\) repeatedly (no more than twice is necessary) until the annunciator for flag 0 cannot be seen in the display.

* all pertinent data registers contain the value 0. This is only for convenience in describing the example and is not required. If the user desires to duplicate the example exactly, and is certain that no important data will be destroyed, the computer's CLRG function may be employed to clear data memory (via \([\text{XEQ}]\ "CLRG"\)).

* the display mode is FIX 0.

* flags 28 and 29 are set (the HP41 decimal point and digit grouping flags).

SOLUTION

<table>
<thead>
<tr>
<th>DISPLAY</th>
<th>INPUT</th>
<th>KEYSTROKES</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINIMUM TAX</td>
<td>[XEQ] &quot;MN&quot;</td>
<td>[R/S]*</td>
<td>Identifies the program.</td>
</tr>
<tr>
<td>STATS: 0.</td>
<td>2</td>
<td>[R/S]</td>
<td>Lines 1-5 of form 1040: filing status.</td>
</tr>
<tr>
<td>L1&lt;a&gt;: 0.</td>
<td>423</td>
<td>[R/S]</td>
<td>Accelerated depreciation on real property.</td>
</tr>
<tr>
<td>L1&lt;b&gt;: 0.</td>
<td>2500</td>
<td>[R/S]</td>
<td>Accelerated depreciation on leased property.</td>
</tr>
<tr>
<td>L1&lt;c&gt;: 0.</td>
<td>4000</td>
<td>[R/S]</td>
<td>Amortization.</td>
</tr>
<tr>
<td>L1&lt;d&gt;: 0.</td>
<td>6000</td>
<td>[R/S]</td>
<td>Reserves for losses on bad debts of financial institutions.</td>
</tr>
<tr>
<td>L1&lt;e&gt;: 0.</td>
<td>2568</td>
<td>[R/S]</td>
<td>Depletion.</td>
</tr>
<tr>
<td>L1&lt;F&gt;: 0.</td>
<td>4509</td>
<td>[R/S]</td>
<td>Intangible drilling costs.</td>
</tr>
<tr>
<td>LINE2= 20,000.</td>
<td>[R/S]*</td>
<td>Total tax preference items. Sum lines 1a through 1f.</td>
<td></td>
</tr>
<tr>
<td>LINE3: 0.</td>
<td>123</td>
<td>[R/S]</td>
<td>Form 1040, line 50.</td>
</tr>
<tr>
<td>DISPLAY</td>
<td>INPUT</td>
<td>KEystrokes</td>
<td>COMMENTS</td>
</tr>
<tr>
<td>----------</td>
<td>---------</td>
<td>------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>LINE4: 0.</td>
<td>[R/S]</td>
<td></td>
<td>Tax from recapture of investment credit.</td>
</tr>
<tr>
<td>LINE5: 0.</td>
<td>[R/S]</td>
<td></td>
<td>Tax on premature redemption of Individual Retirement Bond(s).</td>
</tr>
<tr>
<td>LINE6= 123.</td>
<td>[R/S]*</td>
<td></td>
<td>Sum lines 3 through 5.</td>
</tr>
<tr>
<td>LINE7= 10,000.</td>
<td>[R/S]*</td>
<td></td>
<td>The larger of: 1/2 of line 6, or $10,000 ($5,000 if you are married filing separately).</td>
</tr>
<tr>
<td>LINE8= 10,000.</td>
<td>[R/S]*</td>
<td></td>
<td>Line 7 from line 2.</td>
</tr>
<tr>
<td>LINE9= 1,500.</td>
<td>[R/S]*</td>
<td></td>
<td>Line 8 * 0.15</td>
</tr>
<tr>
<td>LIN10: 0.</td>
<td>[R/S]</td>
<td></td>
<td>1982 net operating loss carryover to 1983.</td>
</tr>
<tr>
<td>LIN11= 0.</td>
<td>[R/S]*</td>
<td></td>
<td>Line 10 * 0.15</td>
</tr>
<tr>
<td>LIN12= 0.</td>
<td>[R/S]*</td>
<td></td>
<td>The smaller of lines 9 and 11.</td>
</tr>
<tr>
<td>LIN13= 1,500.</td>
<td>[R/S]*</td>
<td></td>
<td>Line 12 from line 9.</td>
</tr>
<tr>
<td>LIN14: 0.</td>
<td>[R/S]</td>
<td></td>
<td>Minimum tax deferred from earlier years to 1982.</td>
</tr>
<tr>
<td>LIN15= 1,500.</td>
<td>[R/S]*</td>
<td></td>
<td>Sum lines 13 and 14.</td>
</tr>
<tr>
<td>16&lt;a&gt;: 0.</td>
<td>[R/S]</td>
<td></td>
<td>Credit for the elderly.</td>
</tr>
<tr>
<td>16&lt;b&gt;: 0.</td>
<td>[R/S]</td>
<td></td>
<td>Credit for political contributions.</td>
</tr>
<tr>
<td>16&lt;c&gt;: 0.</td>
<td>[R/S]</td>
<td></td>
<td>Credit for child care expenses.</td>
</tr>
<tr>
<td>16&lt;d&gt;: 0.</td>
<td>[R/S]</td>
<td></td>
<td>Residential energy credits.</td>
</tr>
<tr>
<td>LIN17= 0.</td>
<td>[R/S]*</td>
<td></td>
<td>Sum lines 16a through 16d.</td>
</tr>
<tr>
<td>LIN18= 1,500.</td>
<td>[R/S]*</td>
<td></td>
<td>Line 17 from line 15.</td>
</tr>
<tr>
<td>1,500.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* [R/S] in this instance is not necessary if a printer is attached.
### Computation of Minimum Tax—Individuals

#### 1982

**File this form if your tax preference items (line 2) are more than $10,000 ($5,000 if you are married filing separately) even though you owe no minimum tax, OR if you have minimum tax deferred from an earlier year.**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 1 Tax preference items for minimum tax:

- **(a) Accelerated depreciation on real property—**
  - (1) Low-income rental housing (167(k))
  - (2) Other nonrecovery real property or 15-year real property
- **(b) Accelerated depreciation on leased personal property or leased recovery property other than 15-year real property**
- **(c) Amortization**
- **(d) Reserves for losses on bad debts of financial institutions**
- **(e) Depletion**
- **(f) Intangible drilling costs**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1a(1)</td>
<td>4,230</td>
</tr>
<tr>
<td>1a(2)</td>
<td>4,230</td>
</tr>
<tr>
<td>1b</td>
<td>2,500</td>
</tr>
<tr>
<td>1c</td>
<td>4,000</td>
</tr>
<tr>
<td>1d</td>
<td>6,000</td>
</tr>
<tr>
<td>1e</td>
<td>3,568</td>
</tr>
<tr>
<td>1f</td>
<td>4,500</td>
</tr>
</tbody>
</table>

#### 2 Total tax preference items. Add lines 1(a) through 1(f).

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20,000</td>
</tr>
</tbody>
</table>

#### 3 Amount from Form 1040, line 50.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

#### 4 Tax from recapture of investment credit (from Form 1040, line 54).

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

#### 5 Tax on premature redemption of Individual Retirement Bond(s)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

#### 6 Add lines 3 through 5.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10,000</td>
</tr>
</tbody>
</table>

#### 7 Enter the larger of: (a) one-half of the amount on line 6, or (b) $10,000 ($5,000 if you are married filing separately).

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10,000</td>
</tr>
</tbody>
</table>

#### 8 Subtract line 7 from line 2 (If line 7 is more than line 2, enter zero).

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

#### 9 Multiply amount on line 8 by 15%

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1,500</td>
</tr>
</tbody>
</table>

#### 10 1982 net operating loss carryover to 1983 (attach computation).

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>0</td>
</tr>
</tbody>
</table>

#### 11 Multiply amount on line 10 by 15%

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>0</td>
</tr>
</tbody>
</table>

#### 12 Deferred minimum tax. Enter the amount from line 9 or line 11, whichever is smaller.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>0</td>
</tr>
</tbody>
</table>

#### 13 Minimum tax. Subtract line 12 from line 9.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>1,500</td>
</tr>
</tbody>
</table>

#### 14 Enter minimum tax deferred from earlier years to 1982 (attach computation).

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>0</td>
</tr>
</tbody>
</table>

#### 15 Total minimum tax. Add lines 13 and 14.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>1,500</td>
</tr>
</tbody>
</table>

#### 16 Excess tax credits. If Form 1040, line 50, is more than zero, skip this line and enter the amount from line 15 on line 18.

- **(a) Credit for the elderly**
- **(b) Credit for political contributions**
- **(c) Credit for child care expenses**
- **(d) Residential energy credits**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>16a</td>
<td>0</td>
</tr>
<tr>
<td>16b</td>
<td>0</td>
</tr>
<tr>
<td>16c</td>
<td>0</td>
</tr>
<tr>
<td>16d</td>
<td>0</td>
</tr>
</tbody>
</table>

#### 17 Add lines 16(a) through 16(d).

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>0</td>
</tr>
</tbody>
</table>

#### 18 Subtract line 17 from line 15. If line 17 is more than line 15, enter zero. Enter here and on Form 1040, line 52.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>1,500</td>
</tr>
</tbody>
</table>

*Do not include any tax from Form 4970, Form 4972, Form 5544, or any penalty tax under sec. 72(m)(5).*

For Paperwork Reduction Act Notice, see back of form.

Form 4625 (1982)
### USER INSTRUCTIONS

<table>
<thead>
<tr>
<th>INSTRUCTIONS</th>
<th>INPUT</th>
<th>KEYSTROKES</th>
<th>DISPLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. At a minimum, load the following programs:</td>
<td></td>
<td>[shift][GTO] ..</td>
<td></td>
</tr>
<tr>
<td>&quot;MN&quot; (Minimum Tax)</td>
<td></td>
<td>[shift][GTO] ..</td>
<td></td>
</tr>
<tr>
<td>&quot;0&quot; (misc. routines).</td>
<td></td>
<td>[shift][GTO] ..</td>
<td></td>
</tr>
<tr>
<td>2. Allocate data registers (minimum 50).</td>
<td></td>
<td>[XEQ] &quot;SIZE&quot; 050</td>
<td></td>
</tr>
<tr>
<td>3. Select an appropriate display format.</td>
<td>[shift][FIX] n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Select either &quot;prompting&quot; (flag 0 set) or &quot;non-prompting&quot; (flag 0 clear) mode. Pressing [XEQ] &quot;P&quot; toggles between these modes.</td>
<td>[XEQ] &quot;P&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Run the program.</td>
<td>[XEQ] &quot;SG&quot;</td>
<td>MINIMUM TAX</td>
<td></td>
</tr>
<tr>
<td>6. This display identifies the program.</td>
<td>[R/S]*</td>
<td>STATS: x</td>
<td></td>
</tr>
<tr>
<td>7. Enter one of lines 1-5: your filing status.</td>
<td>status</td>
<td>[R/S]</td>
<td>L1&lt;a&gt;: x</td>
</tr>
<tr>
<td>8. Enter accelerated depreciation on real property.</td>
<td>depr.</td>
<td>[R/S]</td>
<td>L1&lt;b&gt;: x</td>
</tr>
<tr>
<td>9. Enter accelerated depreciation on leased property.</td>
<td>depr.</td>
<td>[R/S]</td>
<td>L1&lt;c&gt;: x</td>
</tr>
<tr>
<td>10. Enter amortization.</td>
<td>amort.</td>
<td>[R/S]</td>
<td>L1&lt;d&gt;: x</td>
</tr>
<tr>
<td>11. Enter reserves for losses on bad debts of financial institutions.</td>
<td>reserves</td>
<td>[R/S]</td>
<td>L1&lt;e&gt;: x</td>
</tr>
<tr>
<td>12. Enter depletion.</td>
<td>depletion</td>
<td>[R/S]</td>
<td>L1&lt;f&gt;: x</td>
</tr>
<tr>
<td>13. Enter intangible drilling costs.</td>
<td>costs</td>
<td>[R/S]</td>
<td>LINE2= x</td>
</tr>
<tr>
<td>14. Output of total tax preference items: sum lines 1a through 1f.</td>
<td>[R/S]*</td>
<td>LINE3: x</td>
<td></td>
</tr>
<tr>
<td>15. Enter Form 1040, line 50.</td>
<td>line 50</td>
<td>[R/S]</td>
<td>LINE4: x</td>
</tr>
<tr>
<td>INSTRUCTIONS</td>
<td>INPUT</td>
<td>KEYSORES</td>
<td>DISPLAY</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------</td>
<td>-------------</td>
<td>------------</td>
<td>------------</td>
</tr>
<tr>
<td>16. Enter tax from recapture of investment credit.</td>
<td>tax</td>
<td>[R/S]</td>
<td>LINE5: x</td>
</tr>
<tr>
<td>17. Enter tax on premature redemption of Individual Retirement Bond(s).</td>
<td>tax</td>
<td>[R/S]</td>
<td>LINE6= x</td>
</tr>
<tr>
<td>18. Output the sum of lines 3 through 5.</td>
<td></td>
<td>[R/S]*</td>
<td>LINE7= x</td>
</tr>
<tr>
<td>19. Output of the larger of: 1/2 of line 6, or $10,000 ($5,000 if you are married filing separately).</td>
<td></td>
<td>[R/S]*</td>
<td>LINE8= x</td>
</tr>
<tr>
<td>20. Output the difference between Line 7 and line 2.</td>
<td></td>
<td>[R/S]*</td>
<td>LINE9= x</td>
</tr>
<tr>
<td>21. Output line 8 * 0.15</td>
<td></td>
<td>[R/S]*</td>
<td>LIN10: x</td>
</tr>
<tr>
<td>22. Enter 1982 net operating loss carryover to 1983.</td>
<td>loss carry.</td>
<td>[R/S]</td>
<td>LIN11= x</td>
</tr>
<tr>
<td>23. Output line 10 * 0.15</td>
<td></td>
<td>[R/S]*</td>
<td>LIN12= x</td>
</tr>
<tr>
<td>24. Output the smaller of lines 9 and 11.</td>
<td></td>
<td>[R/S]*</td>
<td>LIN13= x</td>
</tr>
<tr>
<td>25. Output the difference between line 12 and line 9.</td>
<td></td>
<td>[R/S]*</td>
<td>LIN14: x</td>
</tr>
<tr>
<td>26. Enter the minimum tax deferred from earlier years to 1982.</td>
<td>min. tax</td>
<td>[R/S]</td>
<td>LIN15= x</td>
</tr>
<tr>
<td>27. Output the sum of lines 13 and 14.</td>
<td></td>
<td>[R/S]*</td>
<td>16&lt;a&gt;: x</td>
</tr>
<tr>
<td>28. Enter credit for the elderly.</td>
<td>elderly</td>
<td>[R/S]</td>
<td>16&lt;b&gt;: x</td>
</tr>
<tr>
<td>29. Enter credit for political contributions.</td>
<td>contrib.</td>
<td>[R/S]</td>
<td>16&lt;c&gt;: x</td>
</tr>
<tr>
<td>30. Enter credit for child care expenses.</td>
<td>child care</td>
<td>[R/S]</td>
<td>16&lt;d&gt;: x</td>
</tr>
<tr>
<td>31. Enter residential energy credits.</td>
<td>energy</td>
<td>[R/S]</td>
<td>LIN17= x</td>
</tr>
<tr>
<td>INSTRUCTIONS</td>
<td>INPUT</td>
<td>KEYSTROKES</td>
<td>DISPLAY</td>
</tr>
<tr>
<td>--------------</td>
<td>-------</td>
<td>------------</td>
<td>---------</td>
</tr>
<tr>
<td>32. Output the sum of lines 16a through 16d.</td>
<td></td>
<td>[R/S]*</td>
<td>LIN18= x</td>
</tr>
<tr>
<td>33. Output the difference between line 17 from line 15.</td>
<td></td>
<td>[R/S]*</td>
<td>x</td>
</tr>
<tr>
<td>34. A superfluous value is left in the X-register.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* [R/S] in this instance is not necessary if a printer is attached.
PROGRAM DETAIL -

The Minimum Tax program is 140 steps and 343 bytes (49 registers) long. It requires one other program: the miscellaneous routines program at 233 bytes. At a minimum, 50 data registers are needed, totalling 132.3 registers for operation.

The program has one entry point, global label "MN".

Aside from the flags manipulated by the subroutines called, the program itself manipulates the following flags:

- flag 04: set - if line line 26 (a through d) is being evaluated
  clear - otherwise
- flag 10: set - if line line 1 (a through f) is being evaluated
  clear - otherwise
- flag 12: set - print double wide (for the printed program identifier)
  clear - print single wide

The the data registers used by the form 1040 program are preserved. The following data registers are used:

- 00 = register index for data manipulation
- 01 = lines 1 through 5, form 1040: filing status
- 27 = accumulator index
- 28 = text string used by routine 00
- 29 = counter for routine 00
- 30 = line 1a: accelerated depreciation on real property
- 31 = line 1b: accelerated depreciation on leased personal property
- 32 = line 1c: amortization
- 33 = line 1d: reserves for losses on bad debts of financial institutions
- 34 = line 1e: depletion
- 35 = line 1f: intangible drilling costs
- 36 = line 2: total tax preference items
- 37 = line 3: 1040 Line 50
- 38 = line 4: tax recapture from investment credit
- 39 = line 5: tax on premature redemption of Individual Retirement bonds
- 40 = line 6: sum of lines 3 through 5
- 41 = line 9: line 8 * 0.15
- 42 = line 13: line 12 from line 9
- 43 = line 14: minimum tax deferred from earlier years to 1982
- 44 = line 15: line 13 + line 14
- 45 = line 16a: credit for the elderly
- 46 = line 16b: credit for political contributions
- 47 = line 16c: credit for child care expense
- 48 = line 16d: residential energy credits
- 49 = line 17: sum of lines 16a through line 16d
<table>
<thead>
<tr>
<th>LISTING</th>
<th>COMMENTS</th>
<th>LISTING</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 LBL &quot;MN&quot;</td>
<td></td>
<td>52 RCL 36</td>
<td>line 2</td>
</tr>
<tr>
<td>02 CF 04</td>
<td>not line 16 (yet)</td>
<td>53 RND</td>
<td></td>
</tr>
<tr>
<td>03 SF 12</td>
<td>print double wide</td>
<td>54 @&gt;&lt;Y</td>
<td></td>
</tr>
<tr>
<td>04 36</td>
<td>accum. register</td>
<td>55 -</td>
<td>line 2 - line 7</td>
</tr>
<tr>
<td>05 &quot;MINIMUM</td>
<td></td>
<td>56 @&gt;&lt;O</td>
<td></td>
</tr>
<tr>
<td>TAX&quot;</td>
<td></td>
<td>57 CLX</td>
<td></td>
</tr>
<tr>
<td>06 XEQ &quot;U&quot;</td>
<td>initialize</td>
<td>58 XEQ &quot;Y&quot;</td>
<td>output line 8</td>
</tr>
<tr>
<td>07 XEQ &quot;Z&quot;</td>
<td>status prompt</td>
<td>59 &quot;LINE9&quot;</td>
<td></td>
</tr>
<tr>
<td>08 ADY</td>
<td></td>
<td>60 15</td>
<td>15% of line 8</td>
</tr>
<tr>
<td>09 30</td>
<td>line 1a</td>
<td>61 %</td>
<td></td>
</tr>
<tr>
<td>10 STO 00</td>
<td>reset pointer</td>
<td>62 STO 41</td>
<td></td>
</tr>
<tr>
<td>11 &quot;abcdef&quot;</td>
<td>names for line 1</td>
<td>63 XEQ &quot;X&quot;</td>
<td>output line 9</td>
</tr>
<tr>
<td>12 ASTO 28</td>
<td></td>
<td>64 ADY</td>
<td></td>
</tr>
<tr>
<td>13 6</td>
<td>index for line 1</td>
<td>65 &quot;LIN10&quot;</td>
<td>line 10 prompt</td>
</tr>
<tr>
<td>14 STO 29</td>
<td></td>
<td>66 XEQ &quot;Z&quot;</td>
<td></td>
</tr>
<tr>
<td>15 SF 10</td>
<td>line 1 flag</td>
<td>67 &quot;LIN11&quot;</td>
<td>15% of line 10</td>
</tr>
<tr>
<td>16 XEQ 00</td>
<td>step 115</td>
<td>68 15</td>
<td></td>
</tr>
<tr>
<td>17 &quot;LINE8&quot;</td>
<td></td>
<td>69 %</td>
<td></td>
</tr>
<tr>
<td>18 RCL 36</td>
<td>line 6</td>
<td>70 XEQ &quot;Y&quot;</td>
<td>output line 11</td>
</tr>
<tr>
<td>19 XEQ &quot;X&quot;</td>
<td>output line 6</td>
<td>71 &quot;LIN12&quot;</td>
<td></td>
</tr>
<tr>
<td>20 ADY</td>
<td></td>
<td>72 RCL 41</td>
<td>line 9</td>
</tr>
<tr>
<td>21 40</td>
<td>new accumulator</td>
<td>73 @&gt;&lt;Y?</td>
<td></td>
</tr>
<tr>
<td>22 XEQ &quot;T&quot;</td>
<td>store &amp; clear</td>
<td>74 @&gt;&lt;Y</td>
<td></td>
</tr>
<tr>
<td>23 &quot;345&quot;</td>
<td>accumulator</td>
<td>75 XEQ &quot;Y&quot;</td>
<td>output line 12</td>
</tr>
<tr>
<td>24 ASTO 28</td>
<td>names for 3 - 5</td>
<td>76 &quot;LIN13&quot;</td>
<td></td>
</tr>
<tr>
<td>25 3</td>
<td>index lines 3 - 5</td>
<td>77 RCL 41</td>
<td>line 9</td>
</tr>
<tr>
<td>26 STO 29</td>
<td></td>
<td>78 RND</td>
<td></td>
</tr>
<tr>
<td>27 CF 10</td>
<td>not line 1</td>
<td>79 @&gt;&lt;Y</td>
<td>line 12 fr. line 9</td>
</tr>
<tr>
<td>28 XEQ 00</td>
<td>step 115</td>
<td>80 -</td>
<td></td>
</tr>
<tr>
<td>29 &quot;LINE6&quot;</td>
<td></td>
<td>81 STO 42</td>
<td>output line 13</td>
</tr>
<tr>
<td>30 RCL 40</td>
<td>line 6</td>
<td>82 XEQ &quot;X&quot;</td>
<td></td>
</tr>
<tr>
<td>31 XEQ &quot;X&quot;</td>
<td>output line 6</td>
<td>83 &quot;LIN14&quot;</td>
<td></td>
</tr>
<tr>
<td>32 ADY</td>
<td></td>
<td>84 XEQ &quot;Z&quot;</td>
<td>line 14 prompt</td>
</tr>
<tr>
<td>33 &quot;LINE7&quot;</td>
<td></td>
<td>85 &quot;LIN15&quot;</td>
<td></td>
</tr>
<tr>
<td>34 10</td>
<td></td>
<td>86 RCL 42</td>
<td>line 13</td>
</tr>
<tr>
<td>35 ENTER+</td>
<td></td>
<td>87 RND</td>
<td></td>
</tr>
<tr>
<td>36 5</td>
<td></td>
<td>88 +</td>
<td>line 13 + line 14</td>
</tr>
<tr>
<td>37 RCL 01</td>
<td>status</td>
<td>89 STO 44</td>
<td>output line 15</td>
</tr>
<tr>
<td>38 3</td>
<td></td>
<td>90 XEQ &quot;X&quot;</td>
<td></td>
</tr>
<tr>
<td>39 @&gt;&lt;Y?</td>
<td>status &lt;&gt; 3?</td>
<td>91 ADY</td>
<td></td>
</tr>
<tr>
<td>40 RDN</td>
<td></td>
<td>92 49</td>
<td>new accumulator</td>
</tr>
<tr>
<td>41 RCL Z</td>
<td>5 or 10</td>
<td>93 XEQ &quot;T&quot;</td>
<td>store/clear accum.</td>
</tr>
<tr>
<td>42 1 E3</td>
<td>5000 or 10000</td>
<td>94 &quot;abcd&quot;</td>
<td>line names for 16</td>
</tr>
<tr>
<td>43 *</td>
<td></td>
<td>95 ASTO 28</td>
<td>index for line 16</td>
</tr>
<tr>
<td>44 RCL 40</td>
<td>line 6</td>
<td>96 4</td>
<td></td>
</tr>
<tr>
<td>45 RND</td>
<td></td>
<td>97 STO 29</td>
<td>line 16 flag</td>
</tr>
<tr>
<td>46 2</td>
<td></td>
<td>98 SF 04</td>
<td>need char. line 1</td>
</tr>
<tr>
<td>47 /</td>
<td></td>
<td>99 SF 10</td>
<td>step 115</td>
</tr>
<tr>
<td>48 @&gt;&lt;Y?</td>
<td></td>
<td>100 XEQ 00</td>
<td>not line 1</td>
</tr>
<tr>
<td>49 @&gt;&lt;Y</td>
<td></td>
<td>101 CF 04</td>
<td></td>
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<td>50 XEQ &quot;Y&quot;</td>
<td>output line 7</td>
<td>102 &quot;LIN17&quot;</td>
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<tr>
<td>51 &quot;LINE8&quot;</td>
<td></td>
<td>103 RCL 49</td>
<td>line 17</td>
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<tr>
<td>104 XEQ &quot;X&quot;</td>
<td>output line 17</td>
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<td>105 ADV</td>
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<td>106 &quot;LIN18&quot;</td>
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<td>107 RCL 44</td>
<td>line 15</td>
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<td>108 RAND</td>
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<tr>
<td>109 X&lt;&gt;Y</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>110 -</td>
<td>line 17 from line 15</td>
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<td></td>
</tr>
<tr>
<td>111 X&lt;0?</td>
<td></td>
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<td>112 CLX</td>
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<td>113 XEQ &quot;X&quot;</td>
<td>output line 18</td>
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<td>114 GTO 01</td>
<td>end program</td>
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<tr>
<td>115 LBL 00</td>
<td>common routine</td>
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</tr>
<tr>
<td>116 &quot; &quot;</td>
<td>5 spaces</td>
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</tr>
<tr>
<td>117 ARCL 28</td>
<td>line labels</td>
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</tr>
<tr>
<td>118 ASTO X</td>
<td>5 spaces + 1 character</td>
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</tr>
<tr>
<td>119 ASHF</td>
<td>labels - first character</td>
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<tr>
<td>120 ASTO 28</td>
<td>store remaining labels</td>
<td></td>
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</tr>
<tr>
<td>121 &quot; &quot;</td>
<td>1 space</td>
<td></td>
<td></td>
</tr>
<tr>
<td>122 ARCL X</td>
<td>append 5 spaces + character</td>
<td></td>
<td></td>
</tr>
<tr>
<td>123 ASHF</td>
<td>lose 6 spaces</td>
<td></td>
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</tr>
<tr>
<td>124 ASTO X</td>
<td>store character in X</td>
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<td>125 &quot;LINE&quot;</td>
<td>label for lines 3 - 5</td>
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<tr>
<td>126 FS? 10</td>
<td>line 1?</td>
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<td>127 &quot;L1&lt;&quot;</td>
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<td>128 FS? 04</td>
<td>line 16?</td>
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<td>129 &quot;16&lt;&quot;</td>
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<td>130 ARCL X</td>
<td>label character</td>
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<td>131 FS? 10</td>
<td>line 1 or 16?</td>
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<td>132 &quot;&lt;&quot;</td>
<td>line prompt</td>
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<td>133 XEQ &quot;Y&quot;</td>
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<td>22:27</td>
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<td>46:51</td>
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<td>52:59</td>
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<td>59:65</td>
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<td>77:83</td>
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<td>83:86</td>
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<tr>
<td>18</td>
<td>86:93</td>
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</tbody>
</table>
PROGRAM DESCRIPTION

FORM 6251
ALTERNATE MINIMUM TAX

PURPOSE -

The purpose of this program is to aid the user in the computation of alternate minimum tax using form 6251.

FEATURES/WARNINGS -

The program is relatively straightforward in its operation. Once begun, it steps through the tax form displaying values it assumes to be correct for each line of the form.

Lines that require input from the user are denoted by a colon (":"), between the line name (a string of five characters) and the current line value (some number). An example of a line of this type is "STATS: 2.", where "STATS" is an abbreviation for "Filing Status", the colon indicates that this is a user-specified value, and the "2." is the current value. At any time the user encounters a program display similar to the one just described, its line value may be used as is by pressing [R/S] (to continue the program) or may be changed by keying in some new value (using the numeric keys) and pressing [R/S] (to continue the program). Manual calculations may be performed at this time using the HP-41's stack in order to arrive at the desired value to be input.

Lines that represent values calculated by the program, and which should be copied to the form, are denoted by an equal sign ("=") between the line name and the line value. An example of this is "LIN2b= 3,400.", where "LIN2b" is an abbreviation for "line 2b", the equal sign indicates that this is a program-calculated value, and "3,400." is the current line value. At any time a program display similar to the one just described is encountered, its line value MUST NOT be changed by the user (i.e., by pressing any key other than [R/S]), or the program may perform calculations based on the altered (and incorrect) value.

The program works equally well in any display mode (FIX, SCI, ENG, 0 through 9), but best results will be obtained using either FIX 0 or 2 which correspond to whole dollar amounts and dollars-and-cents amounts respectively. Money values may be entered in either fashion regardless of the display mode and will be remembered by the program exactly as they are input. However, the display mode does have an effect on the program's output. All output values will be generated using the input values rounded to the current display mode (viz., an input of 9.25 in FIX 0 will be rounded to 9 before it is used in a calculation whereas the same value in FIX 2 will not be altered), and will cause small but perhaps significant deviations in output. The fact that the values are retained exactly as input allows the user to rerun the program with no new inputs in another display mode and quickly see the difference between whole dollar and dollars-and-cents input.
The program does no error checking! All input values are assumed to be correct, regardless of their values, and are used as such. Erroneous values will usually not halt the program. The program may either be run to completion, or manually halted and restarted. Either way, the valid inputs may be skipped by pressing [R/S] and the invalid inputs corrected by entering the proper value when the line is displayed.

The program is compatible with printers. If a printer is attached, the program assumes it is on. All input values are echoed and all output values are streamed to the printer. With respect to the user, input values are treated in the same fashion regardless of the printer's presence. The output of program-generated values, on the other hand, differs dramatically based on the printer's existence. Without a printer, the program halts at each output value in the same fashion that it does when asking for input, thus allowing the user to manually record the value. With a printer, program-generated output does not halt program execution, is not displayed and is recorded on the printer, thus minimizing user interaction.

One feature of the program allows the user to skip all input prompts if the existing values are known to be correct. In this mode, the user without a printer may view only those lines calculated by the program. The user with a printer may rapidly generate an uninterrupted printout of both input and output. This mode is active when the flag 0 annunciator is lit in the display.
## SAMPLE PROBLEM

Fill out the form on page 92.

The example assumes:

* that programs "AM" (Alternate Minimum Tax) and "0" (common sub-routines) have been loaded into memory.

* there are 55 available data registers (i.e., SIZE has been set to a number greater than 54).

* the program is in "input mode." This is accomplished by pressing \([XEQ] \) "P" repeatedly (no more than twice is necessary) until the annunciator for flag 0 cannot be seen in the display.

* all pertinent data registers contain the value 0. This is only for convenience in describing the example and is not required. If the user desires to duplicate the example exactly, and is certain that no important data will be destroyed, the computer's CLRG function may be employed to clear data memory (via \([XEQ] \) "CLRG").

* the display mode is FIX 0.

* flags 28 and 29 are set (the HP-41 decimal point and digit grouping flags).

## SOLUTION

<table>
<thead>
<tr>
<th>DISPLAY</th>
<th>INPUT</th>
<th>KEYSTROKES</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALT MIN TAX</td>
<td>2</td>
<td>([XEQ] ) &quot;AM&quot;</td>
<td>Identifies the program.</td>
</tr>
<tr>
<td>STATS: 0.</td>
<td>2</td>
<td>([R/S]*)</td>
<td>Lines 1-5 of form 1040: filing status.</td>
</tr>
<tr>
<td>EXMPT: 0.</td>
<td>7</td>
<td>([R/S])</td>
<td>Line 4e of form 1040: total number of exemptions claimed.</td>
</tr>
<tr>
<td>LINE1: 0.</td>
<td>80000</td>
<td>([R/S])</td>
<td>Line 32 of form 1040: adjusted gross income.</td>
</tr>
<tr>
<td>LIN2a: 0.</td>
<td>68700</td>
<td>([R/S])</td>
<td>Line 34 of form 1040.</td>
</tr>
<tr>
<td>LIN2b= 3,400.</td>
<td></td>
<td>([R/S]*)</td>
<td>Zero bracket amount.</td>
</tr>
<tr>
<td>LIN2c= 7,000.</td>
<td></td>
<td>([R/S]*)</td>
<td>Exemptions * 1000.</td>
</tr>
<tr>
<td>LIN2d= 79,100.</td>
<td></td>
<td>([R/S]*)</td>
<td>Sum of 2a through 2c.</td>
</tr>
<tr>
<td>LINE3= 900.</td>
<td></td>
<td>([R/S]*)</td>
<td>Line 2d from line 1.</td>
</tr>
<tr>
<td>LIN4a: 0.</td>
<td>16100</td>
<td>([R/S])</td>
<td>Adjusted itemized deductions.</td>
</tr>
<tr>
<td>LIN4b: 0.</td>
<td>90000</td>
<td>([R/S])</td>
<td>Capital gain deduction.</td>
</tr>
<tr>
<td>LIN4c= 106,100.</td>
<td></td>
<td>([R/S]*)</td>
<td>Sum lines 4a and 4b.</td>
</tr>
<tr>
<td>LINE5= 107,000.</td>
<td></td>
<td>([R/S]*)</td>
<td>Alternative minimum taxable income: the sum of lines 3 and 4c.</td>
</tr>
<tr>
<td>DISPLAY</td>
<td>INPUT</td>
<td>KEYSTROKES</td>
<td>COMMENTS</td>
</tr>
<tr>
<td>------------</td>
<td>---------</td>
<td>------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>LINE6= 20,000.</td>
<td>[R/S]*</td>
<td></td>
<td>$20,000.00 or $10,000.00 if married filing separately.</td>
</tr>
<tr>
<td>LINE7= 87,000.</td>
<td>[R/S]*</td>
<td></td>
<td>$20,000.00 or $10,000.00 if married filing separately.</td>
</tr>
<tr>
<td>LINE8= 40,000.</td>
<td>[R/S]*</td>
<td></td>
<td>Line 6 from line 5.</td>
</tr>
<tr>
<td>LINE9= 47,000.</td>
<td>[R/S]</td>
<td></td>
<td>Line 8 from line 7.</td>
</tr>
<tr>
<td>LIN10= 4,000.</td>
<td>[R/S]*</td>
<td></td>
<td>The smaller of line 7 and $40,000 ($20,000 if married filing separately).</td>
</tr>
<tr>
<td>LIN11= 9,400.</td>
<td>[R/S]*</td>
<td></td>
<td>10% of line 8.</td>
</tr>
<tr>
<td>LIN12= 13,400.</td>
<td>[R/S]*</td>
<td></td>
<td>20% of line 9.</td>
</tr>
<tr>
<td>LIN13: 0.</td>
<td>123</td>
<td>[R/S]</td>
<td>Minimum tax from form 1040.</td>
</tr>
<tr>
<td>LIN14: 0.</td>
<td>1,500</td>
<td>[R/S]*</td>
<td>Minimum tax from form 1040.</td>
</tr>
<tr>
<td>LIN15: 0.</td>
<td></td>
<td>[R/S]</td>
<td>Tax from recapture of investment credit.</td>
</tr>
<tr>
<td>LIN16= 1,623.</td>
<td>[R/S]</td>
<td></td>
<td>Sum lines 13 through 15.</td>
</tr>
<tr>
<td>LIN17= 11,777.</td>
<td>[R/S]</td>
<td></td>
<td>Line 16 from line 12. If this value is 0 or less, the program will terminate.</td>
</tr>
<tr>
<td>LIN18: 0.</td>
<td>[R/S]</td>
<td></td>
<td>Foreign tax credit.</td>
</tr>
<tr>
<td>LIN19= 11,777.</td>
<td>[R/S]*</td>
<td></td>
<td>Line 18 from 17.</td>
</tr>
<tr>
<td>LIN22= 900.</td>
<td>[R/S]*</td>
<td></td>
<td>Copy of line 3.</td>
</tr>
<tr>
<td>LIN23= 60,000.</td>
<td>[R/S]*</td>
<td></td>
<td>2/3 of line 4b.</td>
</tr>
<tr>
<td>LIN24= 0.</td>
<td>[R/S]*</td>
<td></td>
<td>Line 23 from 22.</td>
</tr>
<tr>
<td>LIN25= 0.</td>
<td>[R/S]*</td>
<td></td>
<td>Schedule value.</td>
</tr>
<tr>
<td>LIN26: 0.</td>
<td>[R/S]</td>
<td></td>
<td>Line 49 from 1040.</td>
</tr>
<tr>
<td>27,20= 0.</td>
<td>[R/S]*</td>
<td></td>
<td>The smaller of lines 25 and 26.</td>
</tr>
<tr>
<td>LIN21= 11,777.</td>
<td>[R/S]*</td>
<td></td>
<td>Alternative minimum tax (Line 20 from line 19).</td>
</tr>
<tr>
<td>11,777.</td>
<td>[R/S]</td>
<td></td>
<td>Superfluous value left in the X-register.</td>
</tr>
</tbody>
</table>

* [R/S] in this instance is not necessary if a printer is attached.
### Alternative Minimum Tax Computation

**Part I: Computation of Alternative Minimum Tax**

1. **Adjusted gross income from Form 1040 or Form 1040NR, line 33 (see instructions).**
   - \[1 \times 80,000\]

2. **Deductions (applies to individuals only):**
   - a. Amount from Form 1040, line 34a or 34b, or Form 1040NR, line 36.
     - \[2 \times 68,700\]
   - b. On your 1982 Form 1040, if you checked Filing Status box.
     - 2 or 5, enter $3,400
     - 1 or 4, enter $2,300
     - 3, enter $1,700
     - \[2b \times 3,400\]
   - c. Multiply $1,000 by the total number of exemptions on Form 1040, line 6e.
     - \[2c \times 7,000\]
   - d. Add lines 2a through 2c (estates and trusts, enter zero).
     - \[2d \times 79,100\]

3. **Subtract line 2d from line 1.**
   - \[3 \times 9,900\]

4. **Tax preference items:**
     - \[4a \times 16,100\]
   - b. Capital gain deduction.
     - \[4b \times 9,000\]
   - c. Add lines 4a and 4b.
     - \[4c \times 106,100\]

5. **Alternative minimum taxable income (add lines 3 and 4c).**
   - \[5 \times 107,000\]

6. **Enter $20,000 ($10,000 if married filing separately, or an estate or trust).**
   - \[6 \times 20,000\]

7. **Subtract line 6 from line 5. If zero or less, do not complete the rest of this form.**
   - \[7 \times 27,000\]

8. **Enter the smaller of line 7 or $40,000 ($20,000 if married filing separately, or an estate or trust).**
   - \[8 \times 40,000\]

9. **Subtract line 8 from line 7.**
   - \[9 \times 9,000\]

10. **Enter 10% of line 8.**
    - \[10 \times 10,000\]

11. **Enter 20% of line 9.**
    - \[11 \times 9,400\]

12. **Add lines 10 and 11.**
    - \[12 \times 19,400\]

13. **Amount from Form 1040, line 50* (estates and trusts—see instructions).**
    - \[13 \times 123,000\]

14. **Minimum tax from Form 1040, 1040NR, 1041, or 990-T.**
    - \[14 \times 1,500\]

15. **Tax from recapture of investment credit.**
    - \[15 \times 623\]

16. **Add lines 13 through 15.**
    - \[16 \times 11,777\]

17. **Subtract line 16 from line 12. If zero or less, do not complete the rest of this form.**
    - \[17 \times -11,777\]

18. **Foreign tax credit (see instructions).**
    - \[18 \times -0\]

19. **Subtract line 18 from line 17. If line 18 is more than line 17, enter zero.**
    - \[19 \times -11,777\]

20. **Credits allowed against alternative minimum tax from Part II, line 27.**
    - \[20 \times -0\]

21. **Alternative minimum tax (subtract line 20 from line 19). If zero or less, enter zero. Enter here and on Form 1040, line 53 or Form 1040NR, line 54 (estates and trusts—see instructions).**
    - \[21 \times 11,777\]

### Part II: Computation of Credits Allowed Against Alternative Minimum Tax

22. **Enter amount from line 3 above.**
    - \[22 \times 9,000\]

23. **Enter 66% of line 4b.**
    - \[23 \times 6,000\]

24. **Subtract line 23 from line 22.**
    - \[24 \times -0\]

25. **Figure this line from one of the schedules below on the amount reported in line 24.**
    - \[25 \times -0\]

26. **Credits, other than Foreign Tax Credit, from Form 1040, line 49. (See instructions.)**
    - \[26 \times -0\]

27. **Enter line 25 or line 26, whichever is smaller. Enter here and on line 20 above.**
    - \[27 \times -0\]

#### Single, Married Filing Jointly, Qualifying Widow(er), or Head of Household

<table>
<thead>
<tr>
<th>Not over $20,000</th>
<th>Over $20,000</th>
<th>But not over $60,000</th>
<th>Over $60,000</th>
<th>But not over $100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not over $10,000</td>
<td>$20,000</td>
<td>$4,000 + 20%</td>
<td>$60,000</td>
<td>$2,000 + 20%</td>
</tr>
</tbody>
</table>

#### Married, Filing Separately, or Estate or Trust

<table>
<thead>
<tr>
<th>Not over $10,000</th>
<th>Over $10,000</th>
<th>But not over $30,000</th>
<th>Over $30,000</th>
<th>But not over $2,000 + 20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10,000</td>
<td>$20,000</td>
<td>$4,000 + 20%</td>
<td>$30,000</td>
<td>$2,000 + 20%</td>
</tr>
</tbody>
</table>

*Do not include any tax from Form 4970, Form 4972, Form 5544, or any penalty tax under section 72(m)(5).

For Paperwork Reduction Act Notice, see back of form.
**User Instructions**

<table>
<thead>
<tr>
<th>Instructions</th>
<th>Input</th>
<th>Key Strokes</th>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) At a minimum, load the following programs:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;AM&quot; (Alternate Minimum Tax)</td>
<td></td>
<td>[shift][GTO] ..</td>
<td></td>
</tr>
<tr>
<td>&quot;0&quot; (misc. routines).</td>
<td></td>
<td>[shift][GTO] ..</td>
<td></td>
</tr>
<tr>
<td>2) Allocate data registers (minimum 55).</td>
<td></td>
<td>[XEQ] &quot;SIZE&quot; 055</td>
<td></td>
</tr>
<tr>
<td>3) Select an appropriate display format.</td>
<td></td>
<td>[shift][FIX] n</td>
<td></td>
</tr>
<tr>
<td>4) Select either &quot;prompting&quot; (flag 0 set) or &quot;non-prompting&quot; (flag 0 clear)</td>
<td></td>
<td>[XEQ] &quot;P&quot;</td>
<td></td>
</tr>
<tr>
<td>mode, pressing [XEQ] &quot;P&quot; toggles between these modes.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) Run the program.</td>
<td></td>
<td>[XEQ] &quot;AM&quot; ALT MIN TAX</td>
<td></td>
</tr>
<tr>
<td>6) This display identifies the program.</td>
<td></td>
<td>[R/S]*</td>
<td>STATS: x</td>
</tr>
<tr>
<td>7) Enter one of lines 1-5: your filing status.</td>
<td></td>
<td>[R/S]</td>
<td>EXMPT: x</td>
</tr>
<tr>
<td>8) Enter line 4e from form 1040: total number of exemptions claimed.</td>
<td></td>
<td>[R/S]</td>
<td>LINE1: x</td>
</tr>
<tr>
<td>9) Enter line 32 of form 1040: adjusted gross income. AGI</td>
<td></td>
<td>[R/S]</td>
<td>LIN2a: x</td>
</tr>
<tr>
<td>10) Enter line 34 of form 1040.</td>
<td></td>
<td>[R/S]</td>
<td>LIN2b= x</td>
</tr>
<tr>
<td>11) Output of zero bracket amount.</td>
<td></td>
<td>[R/S]*</td>
<td>LIN2c= x</td>
</tr>
<tr>
<td>12) Output of exemptions * 1000.</td>
<td></td>
<td>[R/S]*</td>
<td>LIN2d= x</td>
</tr>
<tr>
<td>13) Output of the sum of 2a through 2c.</td>
<td></td>
<td>[R/S]*</td>
<td>LINE3= x</td>
</tr>
<tr>
<td>14) Subtraction of line 2d from line 1.</td>
<td></td>
<td>[R/S]*</td>
<td>LIN4a= x</td>
</tr>
<tr>
<td>15) Output of adjusted itemized deductions.</td>
<td></td>
<td>[R/S]</td>
<td>LIN4b: x</td>
</tr>
<tr>
<td>INSTRUCTIONS</td>
<td>INPUT</td>
<td>KEYS</td>
<td>DISPLAY</td>
</tr>
<tr>
<td>--------------</td>
<td>-------</td>
<td>------</td>
<td>---------</td>
</tr>
<tr>
<td>16. Output of capital gain deduction.</td>
<td>[R/S]</td>
<td>LIN4c= x</td>
<td></td>
</tr>
<tr>
<td>17. Output of the sum of lines 4a and 4b.</td>
<td>[R/S]*</td>
<td>LINE5= x</td>
<td></td>
</tr>
<tr>
<td>18. Output of alternative minimum taxable income: the sum of lines 3 and 4c.</td>
<td>[R/S]*</td>
<td>LINE6= x</td>
<td></td>
</tr>
<tr>
<td>19. Output $20,000.00 or $10,000.00 if married filing separately.</td>
<td>[R/S]*</td>
<td>LINE7= x</td>
<td></td>
</tr>
<tr>
<td>20. Output the difference between Line 6 and line 5.</td>
<td>[R/S]*</td>
<td>LINE8= x</td>
<td></td>
</tr>
<tr>
<td>21. Output the smaller of line 7 and $40,000 ($20,000 if married filing separately).</td>
<td>[R/S]*</td>
<td>LINE9= x</td>
<td></td>
</tr>
<tr>
<td>22. Output of line 8 from line 7.</td>
<td>[R/S]*</td>
<td>LIN10= x</td>
<td></td>
</tr>
<tr>
<td>23. Output 10% of line 8.</td>
<td>[R/S]*</td>
<td>LIN11= x</td>
<td></td>
</tr>
<tr>
<td>24. Output 20% of line 9.</td>
<td>[R/S]*</td>
<td>LIN12= x</td>
<td></td>
</tr>
<tr>
<td>25. Output the sum of lines 10 and 11.</td>
<td>[R/S]*</td>
<td>LIN13: x</td>
<td></td>
</tr>
<tr>
<td>26. Enter line 50 from form 1040.</td>
<td>line 50</td>
<td>[R/S]</td>
<td>LIN14: x</td>
</tr>
<tr>
<td>27. Input minimum tax from form 1040.</td>
<td>min. tax</td>
<td>[R/S]</td>
<td>LIN15: x</td>
</tr>
<tr>
<td>28. Enter tax from recapture of investment credit.</td>
<td>tax</td>
<td>[R/S]</td>
<td>LIN16= x</td>
</tr>
<tr>
<td>29. Output the sum of lines 13 through 15.</td>
<td>[R/S]*</td>
<td>LIN17= x</td>
<td></td>
</tr>
<tr>
<td>30. Output of line 16 from line 12. If this value is 0 or less, the program will terminate.</td>
<td>[R/S]*</td>
<td>LIN18: x</td>
<td></td>
</tr>
<tr>
<td>31. Enter foreign tax credit.</td>
<td>credit</td>
<td>[R/S]</td>
<td>LIN19= x</td>
</tr>
<tr>
<td>INSTRUCTIONS</td>
<td>INPUT</td>
<td>KEYSTROKES</td>
<td>DISPLAY</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-------</td>
<td>------------</td>
<td>---------</td>
</tr>
<tr>
<td>32. Output the difference</td>
<td></td>
<td>[R/S]*</td>
<td>LIN22= x</td>
</tr>
<tr>
<td>between line 18 and 17.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33. Output a copy of line 3.</td>
<td></td>
<td>[R/S]*</td>
<td>LIN23= x</td>
</tr>
<tr>
<td>34. Output 2/3 of line 4b.</td>
<td></td>
<td>[R/S]*</td>
<td>LIN24= x</td>
</tr>
<tr>
<td>35. Output the difference</td>
<td></td>
<td>[R/S]*</td>
<td>LIN25= x</td>
</tr>
<tr>
<td>between line 23 and 22.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36. Output the value from the schedule at</td>
<td></td>
<td>[R/S]*</td>
<td>LIN26: x</td>
</tr>
<tr>
<td>the bottom of the form.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37. Enter line 49 from form 1040.</td>
<td></td>
<td>[R/S]</td>
<td>27,20= x</td>
</tr>
<tr>
<td>38. Output the smaller of</td>
<td></td>
<td>[R/S]*</td>
<td>LIN21= x</td>
</tr>
<tr>
<td>lines 25 and 26.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39. Output alternative minimum tax (line</td>
<td></td>
<td>[R/S]*</td>
<td>x</td>
</tr>
<tr>
<td>20 from line 19).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40. Superfluous value left</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in the X-register.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* [R/S] in this instance is not necessary if a printer is attached.
PROGRAM DETAIL -

The Alternate Minimum Tax program is 236 steps and 554 bytes (78.9 registers) long. It requires one other program: the miscellaneous routines program at 233 bytes. At a minimum, 55 data registers are needed, totalling 167.4 registers for operation.

The program has one entry point, global label "AM".

Aside from the flags manipulated by the subroutines called, the program itself manipulates the following flags:

- Flag 06: Set - enable the accumulate option of routine "X"
- Flag 09: Set - if status = 3
  Clear - otherwise
- Flag 12: Set - print double wide (for the printed program identifier)
  Clear - print single wide

The data registers used by the form 1040 program are preserved with. The following data registers are used:

00 = register index for data manipulation
02 = form 1040, line 6e: total exemptions
01 = lines 1 through 5, form 1040: filing status
17 = line 1: adjusted gross income from 1040
23 = line 26: form 1040 line 49
27 = accumulator index
28 = line 2a: form 1040 line 34
29 = line 2d: total deductions;
  line 3: line 2d from line 1
30 = line 5: alternative minimum taxable income;
  line 7: line 6 from line 5;
  line 12: line 10 + line 11
31 = line 13: form 1040 line 50
32 = line 15: tax from recapture of investment credit
33 = line 16: sum of lines 13 through 15
34 = line 17: line 16 from line 12
35 = line 18: foreign tax credit
36 = line 19: line 18 from line 17
37 = line 20, 27: credits allowed against alternative minimum tax
38 = line 21: alternative minimum tax
39 = line 25: value from schedule on form
44 = line 14: minimum tax from 1040 line 50 (from "MN")
50 = line 4a: adjusted itemized deductions (from sched. A)
54 = line 4b: capital gain deduction (from sched. D)
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<th>LISTING</th>
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<td>01 LBL &quot;AM&quot;</td>
<td>accumulator reg.</td>
<td>52 RCL 50</td>
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<td>02 29</td>
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<td>line 4a + 4b</td>
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<td>03 SF 12</td>
<td>initialize</td>
<td>54 +</td>
<td>output line 4c</td>
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<td>04 &quot;ALT MIN TAX&quot;</td>
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<td>61 SIGN</td>
<td>1 in lastx</td>
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<td>line 2a</td>
<td>65 X=0?</td>
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<td>15 28</td>
<td>get zero brkt amt</td>
<td>66 ISG L</td>
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<td>output line 2b</td>
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<td>sum</td>
<td>70 LASTX</td>
<td>output 10 or 20 K</td>
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<td>20 XEQ &quot;W&quot;</td>
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<td>26 *</td>
<td>enable accumulator</td>
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<td>output 2/3 or 4b</td>
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<td>output line 10</td>
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<td>10% of line 8</td>
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<td>167 XEQ &quot;V&quot;</td>
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<td>line 10 + line 11</td>
<td>168 &quot;LIN25&quot;</td>
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<td>175 X=Y?</td>
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<td>124 31</td>
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<td>prompt &amp; sum</td>
<td>182 *</td>
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<td>line 14</td>
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<td>184 X&lt;&gt;Y</td>
<td>less than min?</td>
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<td>185 X&lt;=Y?</td>
<td>step 210</td>
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<td>prompt &amp; sum</td>
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<td>line 15</td>
<td>187 X&lt;&gt;Y</td>
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<td>136 RCL 33</td>
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<td>188 -</td>
<td>amount over 20000</td>
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<td>189 4 E4</td>
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<td>line 12</td>
<td>190 X&lt;&gt;Y</td>
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<td>191 X&lt;=Y?</td>
<td>between min &amp; max?</td>
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<td>192 GTO 02</td>
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<td>225 STO 37</td>
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PROGRAM REGISTERS NEEDED: 79

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<td>18</td>
<td>82</td>
<td>92</td>
</tr>
</tbody>
</table>
COMMON ROUTINES

PURPOSE -

The purpose of this program is to provide routines common to all programs in the package.

FEATURES/WARNINGS -

Most users will never want or need to know anything about this set of routines other than that they must reside in memory before any of the other tax programs can be run. For this reason, no description of the routines resides in this section. The following section deals with information important to the user who needs to know more about the routines.

PROGRAM DETAIL -

The routines program is 111 steps and 235 bytes (33.6 registers) long. It requires no other programs, though certain routines require each other. The routines access very few registers directly, only R00 and R27 are accessed in this way. The program, because of its use of register 27, "requires" the allocation of 28 data registers though certain routines are capable of accessing any data register and others access none.

The program has 11 entry points: global labels "0", "P", "Q", "S", "T", "U", "V", "W", "X", "Y" and "Z". The labels are intentionally short to save space in their declarations and, more importantly, in their calling. This results, though, in their being nonrepresentative of the routines' functions. Therefore, their descriptions follow.

"0" - This routine places a separator ("============") on the printout. Its main purpose is to place this separator between the form 1040 program output and that of schedules A and G. The routine tests flag 55. The contents of stack register T and the ALPHA register are destroyed.

"P" - This routine selects between "input" and "non-input" modes. This is accomplished simply by toggling flag 00.

"Q" - This routine takes the first character of the alpha register contents and queries the user as to whether the tax schedule corresponding to the character is to be run. The prompt comes up in ALPHA mode, and only the character "Y" will cause the execution of the indicated program. Any other input will not cause the specified routine to be run. The routine destroys the contents of the stack and the ALPHA register.

"U" - This routine performs the most common program initialization functions. The ALPHA register is assumed to contain a desirable display/printout value. The X-register must contain either the number of the accumulator
register (the current register in which some running total is to be kept) or zero. A zero indicates no accumulator. The text string "STATS" is left in the ALPHA register since, in most cases, this is the first prompt to come up in a program.

"T" - Stores the location of the accumulator register in register 27, and clears it. Routine "U" may also access this routine.

"W" - This routine calculates to user's zero bracket amount (the largest sum on which zero taxes can be paid). Since the filing status of the user is necessary for the calculation, register 01 is accessed. The routine consumes the X-, Y-, and L-registers.

"S" - This routine takes the register address in register 00 and subtracts two from it. The indicated register is then recalled and the previous X-register is subtracted from it. If the result is negative, the X-register is cleared. This corresponds to the tax form statement "subtract line B from line A, if B is greater than A then enter 0." The optionally (flag 06 clear) stores the result in the register specified by register 00 and jumps to the "X" routine.

"V", "X", "Y" and "Z" are all entry points to the same routine.

"V" and "X" are used for output. "V" outputs with no register 00 increment while "X" increments. The output routines normally store no values but expect the line label in the ALPHA register and the line value in X. If flag 06 is set before the routine is entered, the routines will accumulate the line value in the currently specified register.

"Y" and "Z" are used for input. "Z" performs the input prompt without adding the received value to that in the accumulator. "Y" performs the accumulation. The routines recall the last specified value for the current line and display its value with the line name (taken from the ALPHA register). The value in the X-register after the prompt (new or old) is then stored, rounded and accumulated (if specified). The register index is incremented, if specified.

The following flags are manipulated:

flag 00 : set - non-input mode  
            clear - input mode
flag 05 : set - routine is for output  
            clear - routine is for input
flag 06 : set - in routine "S", indicates that the value is not to be stored. Otherwise, set indicates that the value is to be added to the accumulator.  
            clear - in "S" it enables the storage option. Otherwise, it disables the accumulator.
flag 08 : set - disables incrementation of the register pointer.  
            clear - enables incrementation of the register pointer.
flag 12 : set - print double wide (for the printed program identifier)  
            clear - print single wide
flag 21: set - enable the printer, cause program execution to halt at display statements if the printer doesn't exist.
clear - disable the printer, disable halts at display statements.

The following data registers are used directly:

00 = register index for data manipulation
27 = accumulator pointer
<table>
<thead>
<tr>
<th>LISTING</th>
<th>COMMENTS</th>
<th>LISTING</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 LBL &quot;O&quot;</td>
<td>print divider</td>
<td>51 GTO IND</td>
<td>based on status</td>
</tr>
<tr>
<td>02 &quot;========&quot;</td>
<td></td>
<td>01</td>
<td></td>
</tr>
<tr>
<td>03 ASTO T</td>
<td>dup ALPHA contents</td>
<td>52 LBL 05</td>
<td>status = 5</td>
</tr>
<tr>
<td>04 ARCL T</td>
<td>printer?</td>
<td>53 LBL 02</td>
<td>status = 3</td>
</tr>
<tr>
<td>05 FS? 55</td>
<td>printer?</td>
<td>54 11</td>
<td></td>
</tr>
<tr>
<td>06 AVIEW</td>
<td></td>
<td>55 +</td>
<td>$2800</td>
</tr>
<tr>
<td>07 RTN</td>
<td>input mode toggle</td>
<td>56 LBL 04</td>
<td>status = 4</td>
</tr>
<tr>
<td>08 LBL &quot;P&quot;</td>
<td>status = 3</td>
<td>57 LBL 01</td>
<td>status = 1</td>
</tr>
<tr>
<td>09 FC?C 00</td>
<td></td>
<td>58 6</td>
<td></td>
</tr>
<tr>
<td>10 SF 00</td>
<td></td>
<td>59 +</td>
<td>$3400</td>
</tr>
<tr>
<td>11 RTN</td>
<td></td>
<td>60 LBL 03</td>
<td>status = 3</td>
</tr>
<tr>
<td>12 LBL &quot;Q&quot;</td>
<td>query</td>
<td>61 1 E2</td>
<td></td>
</tr>
<tr>
<td>13 ASTO T</td>
<td>subroutine label</td>
<td>62 *</td>
<td></td>
</tr>
<tr>
<td>14 &quot;FS&quot;</td>
<td></td>
<td>63 RTN</td>
<td>subtract routine</td>
</tr>
<tr>
<td>15 ASTO Z</td>
<td></td>
<td>64 LBL &quot;S&quot;</td>
<td>register index</td>
</tr>
<tr>
<td>16 &quot;SCHED&quot;</td>
<td></td>
<td>65 RCL 00</td>
<td></td>
</tr>
<tr>
<td>17 ARCL T</td>
<td>schedule name</td>
<td>66 2</td>
<td>two lines back</td>
</tr>
<tr>
<td>18 &quot;T?&quot;</td>
<td></td>
<td>67 -</td>
<td>line value</td>
</tr>
<tr>
<td>19 AON</td>
<td></td>
<td>68 RCL IND</td>
<td></td>
</tr>
<tr>
<td>20 STOP</td>
<td>stop for input</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 AOFF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22 ASTO X</td>
<td>user response</td>
<td>69 X&lt;&gt;Y</td>
<td>index</td>
</tr>
<tr>
<td>23 &quot;Y&quot;</td>
<td></td>
<td>70 RDN</td>
<td>dispose of index</td>
</tr>
<tr>
<td>24 ASTO Y</td>
<td></td>
<td>71 X&lt;&gt;Y</td>
<td>last line value</td>
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<tr>
<td>25 X=Y?</td>
<td>response = &quot;Y&quot;?</td>
<td>72 -</td>
<td></td>
</tr>
<tr>
<td>26 GTO IND</td>
<td>call routine</td>
<td>73 X&lt;0?</td>
<td></td>
</tr>
<tr>
<td>27 RTN</td>
<td></td>
<td>74 CLX</td>
<td></td>
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<tr>
<td>28 LBL &quot;U&quot;</td>
<td>initialize</td>
<td>75 FC? 06</td>
<td>store?</td>
</tr>
<tr>
<td>29 CF 05</td>
<td>input/output flag</td>
<td>76 STO IND</td>
<td>store in current</td>
</tr>
<tr>
<td>30 CF 06</td>
<td>store accum. flag</td>
<td>77 GTO 06</td>
<td>line</td>
</tr>
<tr>
<td>31 CF 08</td>
<td>increment flag</td>
<td>78 LBL &quot;Y&quot;</td>
<td>output/output/no increment</td>
</tr>
<tr>
<td>32 CF 09</td>
<td>ABS flag</td>
<td>79 SF 08</td>
<td>output w/increment</td>
</tr>
<tr>
<td>33 SF 21</td>
<td>enable printer</td>
<td>80 LBL &quot;X&quot;</td>
<td>from &quot;S&quot;</td>
</tr>
<tr>
<td>34 ADV</td>
<td></td>
<td>81 LBL 06</td>
<td>output flag</td>
</tr>
<tr>
<td>35 AVIEW</td>
<td></td>
<td>82 SF 05</td>
<td>indicates output</td>
</tr>
<tr>
<td>36 ADV</td>
<td></td>
<td>83 &quot;T=&quot;</td>
<td>step 100</td>
</tr>
<tr>
<td>37 CF 12</td>
<td>single wide print</td>
<td>84 GTO 00</td>
<td>input w/accum.</td>
</tr>
<tr>
<td>38 1</td>
<td>filling status</td>
<td>85 LBL &quot;Y&quot;</td>
<td>accumulate flag</td>
</tr>
<tr>
<td>39 STO 00</td>
<td></td>
<td>86 SF 06</td>
<td>output no/accum.</td>
</tr>
<tr>
<td>40 RDN</td>
<td></td>
<td>87 LBL &quot;Z&quot;</td>
<td>output</td>
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<td>41 STATS</td>
<td></td>
<td>88 CF 05</td>
<td>increment reg ind</td>
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<tr>
<td>42 X=0?</td>
<td>no accumulator?</td>
<td>89 CF 08</td>
<td>indicates input</td>
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<tr>
<td>43 RTN</td>
<td></td>
<td>90 &quot;T:&quot;</td>
<td>last line value</td>
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<td>44 LBL &quot;T&quot;</td>
<td>accumulator init.</td>
<td>91 RCL IND</td>
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<td>45 STO 27</td>
<td>store index</td>
<td>92 ARCL X</td>
<td>non-input mode?</td>
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<tr>
<td>46 CLX</td>
<td></td>
<td>93 FC? 00</td>
<td>store/restore</td>
</tr>
<tr>
<td>47 STO IND</td>
<td>zero accumulator</td>
<td>94 PROMPT</td>
<td>value</td>
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<td>48 RTN</td>
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<td>95 STO IND</td>
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<td>49 LBL &quot;W&quot;</td>
<td>zero brkt amount</td>
<td>96 ASTO T</td>
<td>line name</td>
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<td>50 17</td>
<td>$1700</td>
<td>97 CLA</td>
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<tr>
<td>98 ARCL T</td>
<td>common entry</td>
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<td>99 &quot;F&quot;</td>
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<td>100 LBL 00</td>
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<td>101 ARCL X</td>
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<td>102 FC? 55</td>
<td>no printer?</td>
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<td>103 FS?C 05</td>
<td>output?</td>
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<td>105 CLD</td>
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<td>106 RND</td>
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<tr>
<td>107 FS?C 06</td>
<td>increment?</td>
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<td>108 ST+ IND</td>
<td>accumulate?</td>
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<td>109 FC?C 08</td>
<td>increment?</td>
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<td>110 ISG 00</td>
<td>increment reg. index</td>
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<td>111 END</td>
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PROGRAM REGISTERS NEEDED: 34

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